

BOOK NO. I

SET NO. _____

STUDY GUIDE

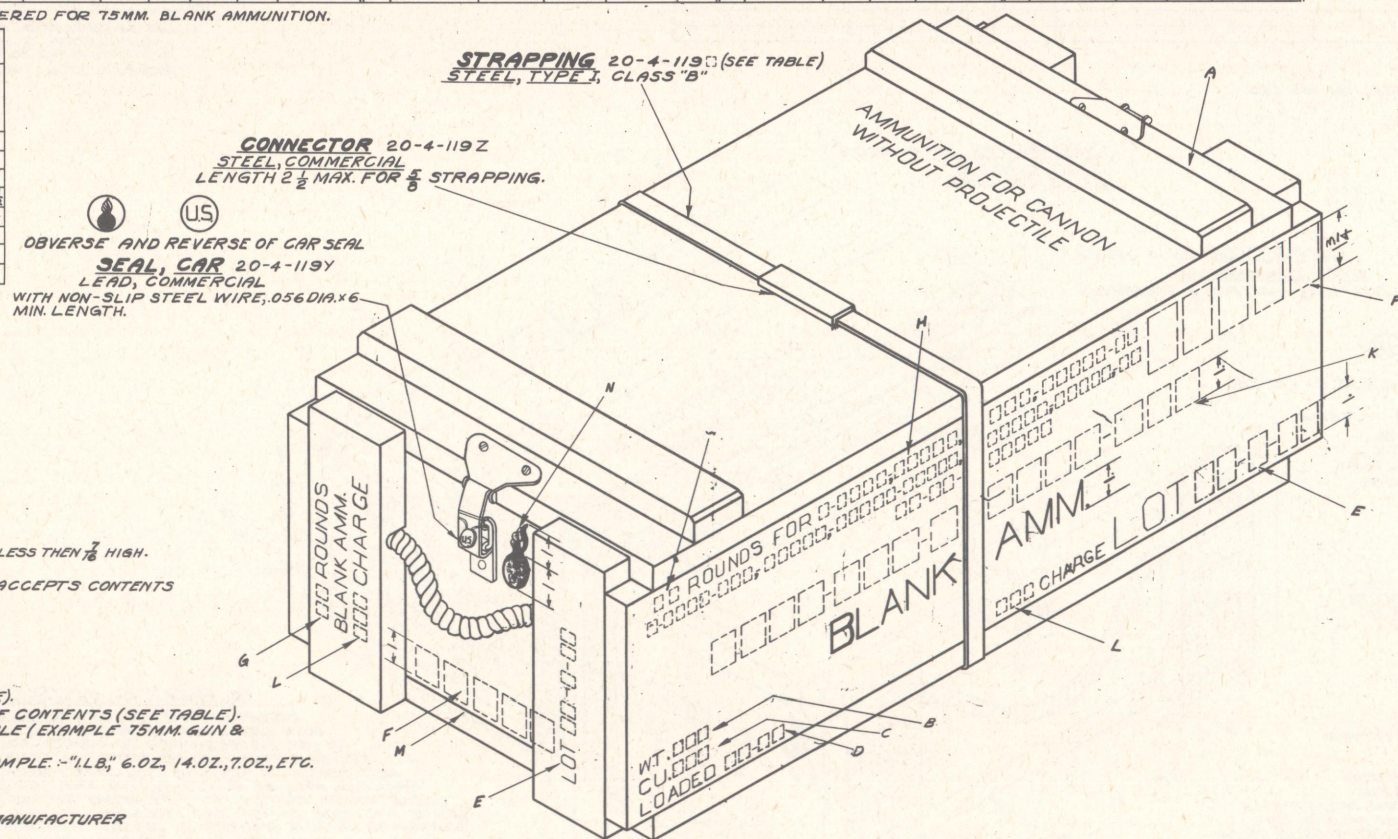
ORDNANCE AMMUNITION DRAWINGS

20-4-119 TO 72-1-70

TO BE USED BY AMMUNITION INSPECTORS SCHOOL, SAVANNA ORDNANCE DEPOT

LINE NUMBER	NOMENCLATURE	105 MM. HOWITZER, M2				3 INCH FIELD GUNS, 1902, 1904, 1905 (d)				3 INCH (15 PDR) GUN, M1903, AND 3 INCH GUN, M1917, M17A2, M17M1, M17A2, M17M1, M1925M1, M2, AND M4.				3 INCH (15 PDR) GUN, M1902, AND 3 INCH GUN, M1916, M19M1 & M3.				37 MM. GUN, M1916			
		QUANTITY	DRAWING NUMBER OR PIECE-MARK	WEIGHT (ESTIMATED) (POUNDS)	CUBICAL DISPLACEMENT (CU. FT.)	SIZE	QUANTITY	DRAWING NUMBER OR PIECE-MARK	WEIGHT (ESTIMATED) (POUNDS)	CUBICAL DISPLACEMENT (CU. FT.)	SIZE	QUANTITY	DRAWING NUMBER OR PIECE-MARK	WEIGHT (ESTIMATED) (POUNDS)	CUBICAL DISPLACEMENT (CU. FT.)	SIZE	QUANTITY	DRAWING NUMBER OR PIECE-MARK	WEIGHT (ESTIMATED) (POUNDS)	CUBICAL DISPLACEMENT (CU. FT.)	SIZE
1	BOX AND CONTENTS			94.38	1.94				77.03	1.98				70.43	1.85						
2	BOX, EMPTY	1	76-1-522F	18.60			1	76-1-522K	23.90	23.90		1	76-1-522L	19.00			1	76-1-522N	21.00		
3	FIBER CONTAINER	10	76-1-200	12.50			20	76-1-156A	16.00	16.00		10	76-1-142H	10.00			100	76-1-146A	25.00		
4	FILLER	(A)	20-4-119D	.80			(A)	20-4-119Q	.90	.90		(A)	20-4-119S	.65			(A)	20-4-119T	1.50		
5	STRAPPING	1	20-4-119U	.18			1	20-4-119W	.22	.22		1	20-4-119V	.18			1	20-4-119U	.18		
6	BLANK AMMUNITION	10	75-1-42A	62.30			20	75-1-30A	63.60			10	75-1-33A	42.10			100	75-1-28A	53.00		
7	BLANK AMMUNITION						20	75-1-67A	62.2												
8	BLANK AMMUNITION						20	75-1-107A	53.6												

37 MM. GUN, M3, M5 & M6					(d) THESE GUNS RECHAMBERED FOR 75MM. BLANK AMMUNITION.				
QUANTITY	DRAWING NUMBER OR PIECE-MARK	WEIGHT (ESTIMATED) (POUNDS)	CUBICAL DISPLACEMENT (CU. FT.)	SIZE	QUANTITY	DRAWING NUMBER OR PIECE-MARK	WEIGHT (ESTIMATED) (POUNDS)	CUBICAL DISPLACEMENT (CU. FT.)	SIZE
1	76-1-522C	22.0	2.24		1	76-1-652M	17.8		
10	76-1-579	17.5			8	71-604V	13.6		
(A)	20-4-119V	.9			(A)	20-4-119A	1.5		
1	20-4-119W	.2			1	20-4-119B	.18		
70	75-1-155A	70.0			8	75-1-154A	65.84		



(a) PACKING INSTRUCTIONS
WHEN PACKING BLANK AMMUNITION OF ALL CALIBERS (PACKED IN FIBER CONTAINERS) IN BOX, PLACE ONE FILLER IN THE BOTTOM OF BOX. INSERT PROPER NUMBER OF CONTAINERS IN VERTICAL POSITION. COVER DOWN. PLACE ONE OR MORE FILLERS ON TOP AS REQUIRED TO PACK CONTENTS TIGHTLY. CLOSE COVER AND FASTEN TUGGLES BY SNAPPING INTO CLOSED POSITION. SECURE EACH TUGGLE BY PASSING CAR SEAL WIRE AROUND AND THROUGH ONE TOP CORNER OF LINK, ACROSS OUTSIDE FACE OF PIVOTED LEVER, DOWN AND THROUGH THE OPPOSITE CORNER OF LINK, AND RETURNING OVER PIVOTED LEVER, PASS WIRE THROUGH CAR SEAL, PULL TIGHT AND SEAL, WITH EMBOSSED SEALER TO PRODUCE DESIGNATION AS SHOWN. PLACE STRAPPING AROUND BOX, AS SHOWN, AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX. THEN SECURE WITH CONNECTOR.

PACKING AND MARKING OF PACKING BOX FOR BLANK AMMUNITION IN FIBER CONTAINERS FOR THE FOLLOWING GUNS AND HOWITZERS.
FIBER CONTAINER 105MM, M34;
105MM, HOWITZER, M2.
FIBER CONTAINER 75MM, M27A1;
75MM, GUN M1937, M1916 AND M1917.
75MM, HOWITZER, M1 AND M1A1.
3 INCH FIELD GUNS 1902, 1904 AND 1905.
FIBER CONTAINER 3 INCH, M22A1.
3 INCH (15 PDR) GUN, M1903.
3 INCH A.A. GUN, M1917, M17M1, M17M1A2, M17M1, M1925M1, M2 AND M4.
FIBER CONTAINER 3 INCH, M23A1.
3 INCH (15 PDR) GUN, M1902.
3 INCH A.A. GUN M1918, M19M1 AND M19.
FIBER CONTAINER 37MM, M24A1, 37MM, GUN 1916.
FIBER CONTAINER 37MM, M12A, 37MM, GUN M3, M5 & M6.
FIBER CONTAINER 90MM, M26, 90MM, GUN M1

SUPERSEDES OLD TRACING 20-4-119 UNDER REVISION DATE OF MARCH 23, 1943

PACKING & MARKING OF BOXES, PACKING FOR BLANK AMMUNITION

AUGUST 4, 1931		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	119	
7	9-1-38				
8	2-10-41				
9	3-23-43				
10	10-25-43				
11	4-24-44				
DRG. PERTAINS TO		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
		DFTSMAN			
		TRACER			
		ENGINEER			
		CHECKED			
		SUBMITTED			
		EXAMINED			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
		ORDNANCE DEPT., U. S. A.			

LINE NO.	NAME OF PART	NUMBER REQUIRED COMPONENT	PIECE-MARK	LIST OF PARTS				APPROX. UNIT WEIGHT (POUNDS)	APPROX. WT. OF BIN STOCK PER 1000 ASSEMBLIES	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER			
1	CONNECTOR	1	20-4-119Z	STRIP	STEEL		COMMERCIAL			(K)(H)
2	FILLER (SEE TABLE)	(A)	20-4-119D	SHEET	DOUBLE FACED CORRUGATED STRAWBOARD		19-10			
3	SEAL, CAR	2	20-4-119Y	STRIP	LEAD		COMMERCIAL			(H)(K)
4	STRAPPING (SEE TABLE)	1	20-4-119U	STRIP	STEEL	TYPE I, CLASS "B"	99-5-781			
5					MARKING MATERIAL YELLOW	I	A13-964			
6					ENAMEL, EARTH BROWN NO. 302	I	3-67			(B)

LINE NO.	SPEC. NUMBER	REQUIRED BY	LIST OF SPECIFICATIONS			
			1	2	3	4
1	50-0-1	DRG. 20-4-119	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR.			
2	3-67	DRG. 20-4-119	ENAMEL, LUSTRELESS, QUICK DRYING, FOR AMMUNITION.			
3	99-M-151	99-5-781	METALS; GENERAL SPECIFICATION FOR INSPECTION OF			
4	3-1	3-67	PAINTS AND RELATED MATERIAL, GENERAL SPEC'S. FOR			
5	A13-964	DRG. 20-4-119	MARKING MATERIAL (FOR WOODEN CRATES AND BOXES)			
6	3-162	DRG. 20-4-119	LACQUER ENAMEL, LUSTRELESS, FOR AMMUNITION			
7	100-2	DRG. 20-4-119	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR			
8	99-5-781	DRG. 20-4-119	STRAPPING, FLAT, STEEL			
9	19-10	DRG. 20-4-119	FILLERS, STRAWBOARD, CORRUGATED, SINGLE AND DOUBLE FACED			
10	100-14	DRG. 20-4-119	GENERAL SPECIFICATION FOR PACKING			

(f) TO BE PAINTED WITH EARTH BROWN ENAMEL OR LACQUER ENAMEL NO. 302
(g) ALTERNATIVE MATERIAL- LACQUER ENAMEL EARTH BROWN, NO. 302, GRADE I, SPEC. 3-162
(h) ALTERNATIVE- WIRE STRAPPING PER SPEC. 100-14

THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.
(i) THESE SPECIFICATIONS ARE NOT MANDATORY BUT MAY BE USED BY THE CONTRACTOR.

SUPERSEDED BY 76-1-1250, 76-1-1228, 76-1-1235 AND 76-1-581 WITH CHANGE JULY 21, 1950.

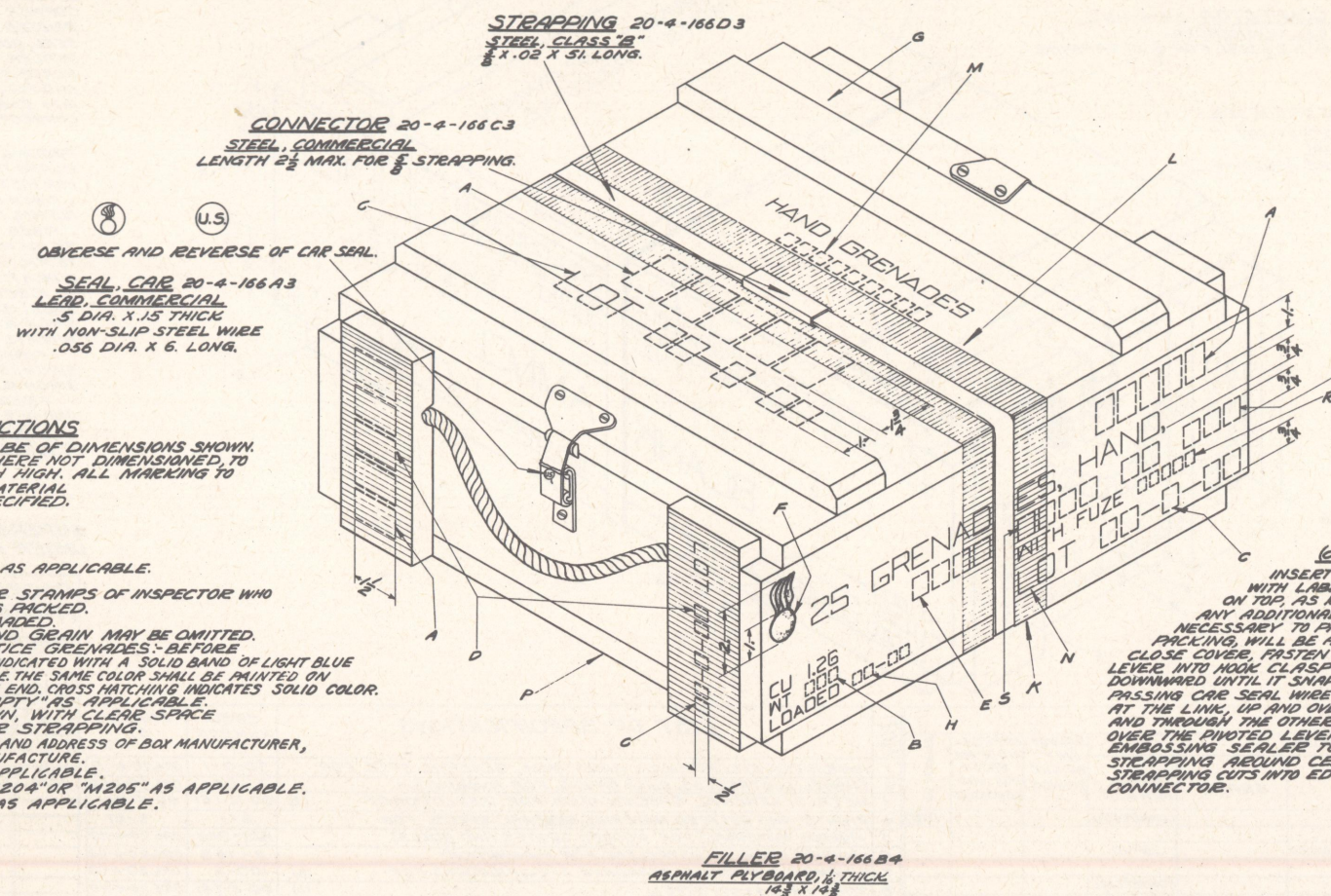
LINE NO.	NAME OF PART	NUMBER REQD. PER COMPONENT	PIECE-MARK	LIST OF PARTS			APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF RAW STOCK (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE			
1	CONNECTOR	1	20-4-166C	STRIP	STEEL				(b)
2	FILLER	(d)	20-4-166B	SHEET	ASPHALT PLYBOARD	TYPE I			
3									
4	SEAL, CAR	2	20-4-166A		LEAD				
5	STRAPPING	1	20-4-166D	STRIP	STEEL	CLASS "B"			(c)
6									
7									
8					ENAMEL, LIGHT BROWN	I		3-67	
9					MARKING MATERIAL, BLACK			AXS-964	
10									
11									
12									

LINE NO.	WEIGHTS (ESTIMATED)		
	PART	FRAG.	PRACTICE
1	BOX, EMPTY	13.75	13.75
2	FIBER CONTAINERS (25)	5.50	5.50
3	GRENADES (25)	32.75	32.00
4	FILLER, STRAPPING		
5	AND CONNECTOR	.90	.90
6	TOTAL	52.90 LBS.	52.15 LBS.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION GEN. SPEC. NO. 30-0-1	30-0-1	ARS 20-4-166
2	BOARD, COMPOSITION, WATER RESISTANT, SOLID	AXS-1623	ARS 20-4-166
3			
4	METALS; GENERAL SPECIFICATIONS FOR INSPECTION OF	QQ-M-151	QQ-S-781
5			
6	PRINTS AND RELATED MATERIALS, GENERAL SPECIFICATIONS FOR	3-1	AXS-964
7			
8			
9			
10	STANDARD SPECIFICATIONS FOR MARKING SHIPMENTS	100-2	ARS 20-4-166
11			
12	STRAPPING, FLAT, STEEL	QQ-S-781	ARS 20-4-166
13	STRAPPING, ROUND, STEEL	QQ-S-790	ARS 20-4-166
14	MARKING MATERIAL (FOR STAINED WOODEN CRATES AND BOXES)	AXS-964	ARS 20-4-166
15			

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(b) NOT REQUIRED WHEN WIRE STRAPPING IS USED.
(c) ALTERNATIVE MATERIAL: ROUND WIRE, STEEL, NO. 13 GAUGE, 100,000 LBS. PER 50 IN. TENSILE STRENGTH SPEC. QQ-S-790.



PACKING AND MARKING OF PACKING BOX FOR 25 OF THE FOLLOWING HAND GRENADES (IN FIBER CONTAINERS MAHI) COMPLETE:-
GRENADE, HAND, FRAG, MK 2, W/ FUZE, M6A4-C.
GRENADE, HAND, PRACTICE, M21, W/ FUZE, M10A3.
GRENADE, HAND, FRAG, MK 2, W/ FUZE, M204.
GRENADE, HAND, PRACTICE, M21, W/ FUZE, M205.
SUPERSEDES OLD TRACING 20-4-166 UNDER REVISION DATE OF JULY 27, 1943.

PACKING AND MARKING OF BOX FOR HAND GRENADES, FRAGMENTATION, MK 2 OR PRACTICE, M21			
REVISIONS	CLASS	DIVISION	DRAWING FILE
1 8-11-38	20	4	166
2 7-16-41			
3 7-27-43			
4 8-15-45			
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
DECIMAL ±			
FRACTIONAL ±			
ANGULAR ±			
DRG. PERTAINS TO	TRACER	ENGINEER	
CHECKER	J.I.G.	J.I.G.	
SUBMITTED			
EXAMINED			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
ORDNANCE DEPT., U.S.A.			

FOR PACKING BOX SEE DRG. 76-1-522 P.
FOR FIBER CONTAINER WITH GRENADE SEE DRG. 75-14-210.

SCALE, INCHES, 1/2

SUPERSEDED BY 76-1-1266 WITH CHANGE NOVEMBER 4 1949.

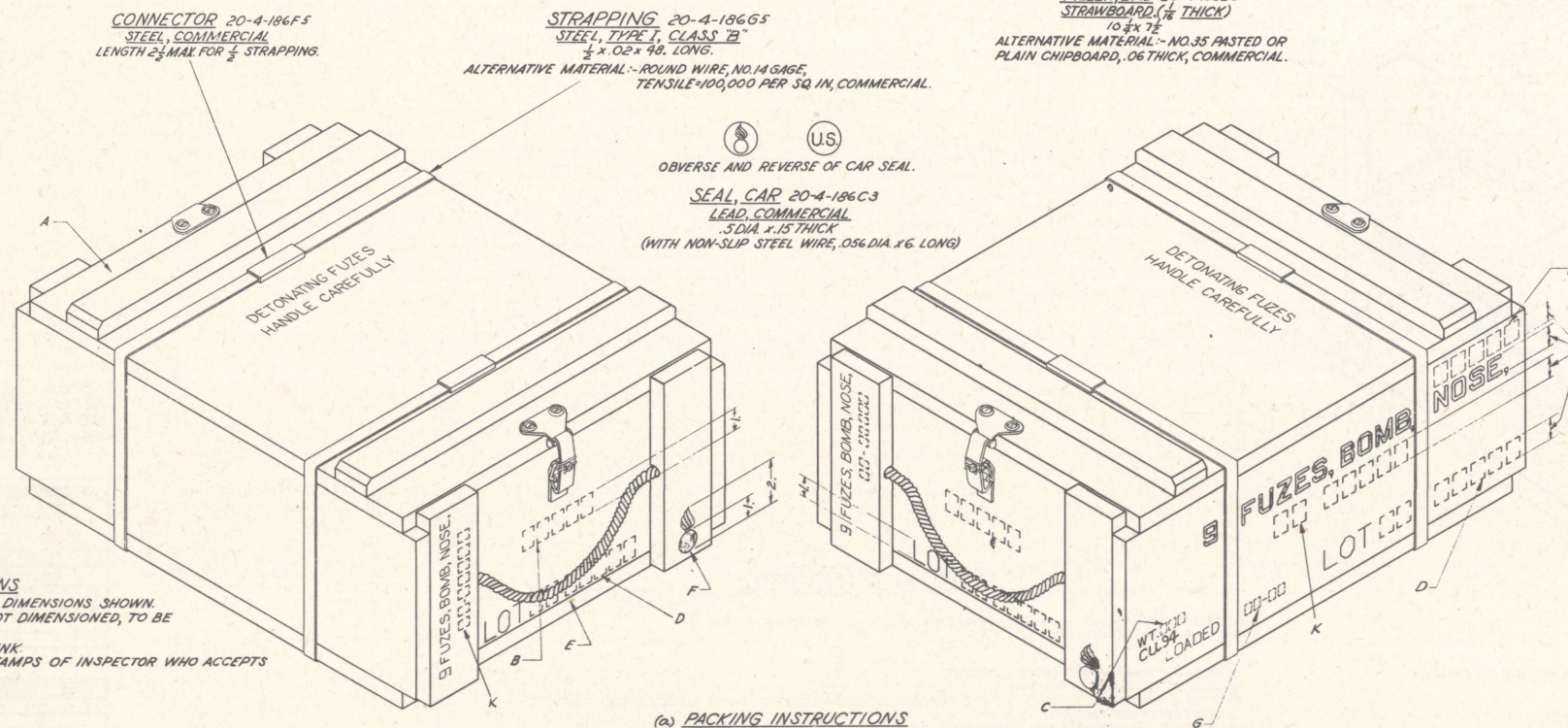
LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE MARK	MATERIAL			SPEC. NUMBER	APPROX. UNIT WEIGHT (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE			
1	CONNECTOR	2	20-4-186F	STRIP	STEEL		COMMERCIAL		(f)(g)
2									
3	FILLER, END	(a)	20-4-186E	SHEET	STRAWBOARD		50-11-69		(b)
4	FILLER, SIDE	(a)	20-4-186D	SHEET	STRAWBOARD		50-11-69		(b)
5	FILLER, TOP	(a)	20-4-186A	SHEET	STRAWBOARD		50-11-69		(b)
6									
7	SEAL, CAR	2	20-4-186C		LEAD		COMMERCIAL		
8	STRAPPING	2	20-4-186G	STRIP	STEEL	TYPE I, CLASS B	QQ-S-781		(g)
9									
10									
11					INK, BLACK		36-3		(h)
12									

(h) ALTERNATIVE MATERIAL: NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

(f) ALTERNATIVE MATERIAL: ROUND WIRE, NO. 14 GAGE, TENSILE 100,000 PER SQ. IN., COMMERCIAL.

(g) NOT REQUIRED WHEN WIRE IS USED.

(a) ALTERNATIVE MATERIAL: PRINT, STENCIL, BLACK, TYPE I OR II, SPEC. 3-179.



MARKING INSTRUCTIONS
LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/8" INCH HIGH.
ALL MARKING TO BE WITH BLACK INK.
A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
B-INSERT "A.I.C." SYMBOL.

C-INSERT GROSS WEIGHT.
D-INSERT LOT NUMBER.
E-MARK BOTH ENDS ALIKE.
F-ORDNANCE INSIGNIA.
G-INSERT MONTH AND YEAR LOADED.
H-LOCATE MARKING AS SHOWN WITH CLEAR SPACES 1 INCH WIDE FOR STRAPPING.
K-INSERT AN-M103A1, AN-M139A1, AN-M140A1, M163, M164 OR M165 AS APPLICABLE.
BOX MANUFACTURER'S NAME, ADDRESS AND DATE OF MANUFACTURE TO BE MARKED ON BOTTOM OF BOX.

(a) PACKING INSTRUCTIONS

PACK NINE FUZES (IN METAL CONTAINERS) IN VERTICAL POSITION. INSERT ONE OR MORE FILLERS AT SIDES, ENDS, AND ON TOP, AS REQUIRED, TO PACK CONTENTS TIGHTLY. CLOSE COVER; FASTEN BY PLACING TONGUE OF PIVOTED LEVER INTO HOOK CLASP AND PRESSING INWARD UNTIL IT SNAPS INTO CLASPED POSITION AND SECURE BY PASSING CAR SEAL WIRE THROUGH ONE TOP CORNER OF THE LINK, UP AND OVER THE PIVOTED LEVER, DOWN, UNDER AND THROUGH THE OTHER TOP LINK CORNER AND RETURN OVER THE PIVOTED LEVER, PULL TIGHT AND SEAL WITH EMBOSSING SEALER TO PRODUCE DESIGN'S SHOWN. PLACE STRAPPING AROUND BOX, PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, AND SECURE WITH CONNECTORS. LOCATE STRAPPING AS SHOWN.
IN ALTERNATIVE METHOD FOR SEALING: SECURE BY PASSING CAR SEAL WIRE THROUGH LOOP END OF BRACKET HOLDING PIVOT LEVER LINK BEFORE PIVOT LEVER IS CLAMPED, RETURN OVER THE PIVOTED LEVER, PULL TIGHT AND SEAL WITH EMBOSSING SEALER TO PRODUCE DESIGN'S SHOWN.

FOR PACKING BOX, SEE DRG. 76-16-211.
FOR CONTAINER, SEE DRG. 76-1-262.

LINE NO.	WEIGHTS (ESTIMATED)	
	PART	POUNDS
1	BOX (EMPTY)	10.0
2	CONTAINERS, COMPLETE (9)	7.2
3	FUZZES, COMPLETE (9)	33.3
4	FILLERS, STRAPPING, AND CONNECTORS	1.5
5		
6	TOTAL	52.0

FILLER TOP 20-4-186A5
STRAWBOARD, (1/8" THICK)
10 1/2" x 10 1/2"
ALTERNATIVE MATERIAL: NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

FILLER SIDE 20-4-186D5
STRAWBOARD, (1/8" THICK)
10 1/2" x 7 1/2"
ALTERNATIVE MATERIAL: NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

FILLER END 20-4-186E5
STRAWBOARD, (1/8" THICK)
10 1/2" x 7 1/2"
ALTERNATIVE MATERIAL: NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC. FOR	50-0-1	DRG. 20-4-186
2			
3	INK, FOR WOODEN BOXES	36-3	DRG. 20-4-186
4			
5	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	(e) QQ-M-151	QQ-S-781
6	PRINT, STENCIL	3-179	DRG. 20-4-186
7	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1	3-179
8			
9	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	(e) 100-2	DRG. 20-4-186
10	STRAPPING, FLAT; STEEL	(e) QQ-S-781	DRG. 20-4-186
11	STRAWBOARD (FOR PACKING AMMUNITION)	(e) 50-11-69	DRG. 20-4-186
12			

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(e) THESE SPECIFICATIONS ARE NOT MANDATORY BUT MAY BE USED BY THE CONTRACTOR.

PACKING AND MARKING OF PACKING BOX FOR 9 OF THE FOLLOWING FUZES (IN METAL CONTAINERS):
FUZE, BOMB NOSE, AN-M103A1
FUZE, BOMB NOSE, AN-M139A1
FUZE, BOMB NOSE, AN-M140A1
FUZE, BOMB NOSE, M163
FUZE, BOMB NOSE, M164
FUZE, BOMB NOSE, M165

SUPERSEDES OLD TRACING 20-4-186 UNDER REVISION DATE OF FEBRUARY 8, 1943.

PACKING AND MARKING OF BOX,
PACKING FOR FUZZES, BOMB NOSE, AN-M103A1, AN-M139A1, AN-M140A1, M163, M164 AND M165.

JANUARY 17, 1938		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	186	
2	3-12-42				
3	2-9-43				
4	1-24-44				
5	8-15-45				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED					
DECIMAL ±					
FRACTIONAL ±					
ANGULAR ±					
DRG. PERTAINS TO					
73-8-14					
73-8-292					
73-8-293					
73-8-363					
EXAMINED					
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE					
COLONEL, ORD. DEPT. U.S.A.					
ORDNANCE DEPT. U.S.A.					

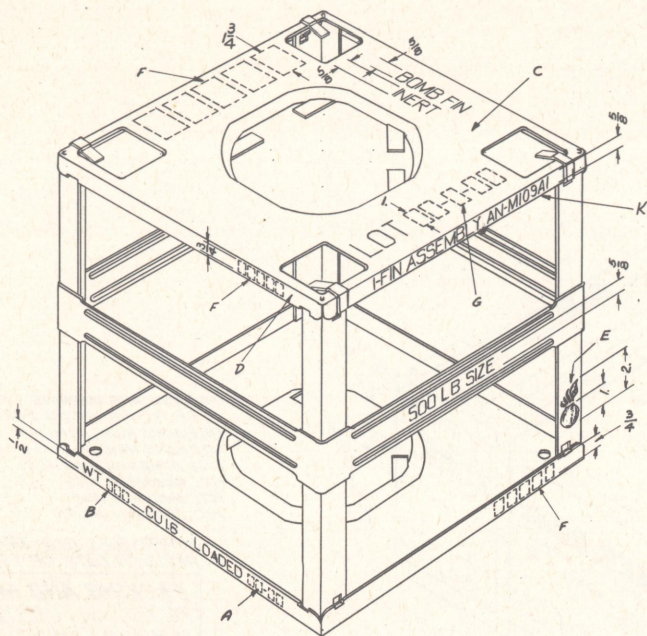
LINE NO.	NAME OF PART	NUMBER REQ'D PER COMPONENT	PIECE MARK	LIST OF PARTS				APPROXIMATE UNIT WEIGHT (POUNDS)	APPROXIMATE WT OF FIN STOCK PER 1000 ASSEMBLIES	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NO.			
1										
2										
3										
4					ENAMEL, OLIVE-DRAB, RUST-INHIBITING	TYPE I, II, OR IV	TT-E-485			
5					INK, STENCIL, YELLOW		TT-I-53B			(a)
6										

(a) ALTERNATIVE MATERIAL (c)-YELLOW LACQUER ENAMEL, GRADE I OR II, SPEC. JAN-L-73 (b)
 (b) ALTERNATIVE MATERIAL (c)-YELLOW ENAMEL, GRADE I OR II, SPEC. JAN-E-74
 (c) ALTERNATIVE MATERIALS ARE INTENDED TO BE USED ONLY WHEN PRESCRIBED MATERIALS ARE NOT AVAILABLE.

LINE NO.	WEIGHTS (ESTIMATED)	
	PART	POUNDS
1	FIN ASSEMBLY	18.60
2	CRATE, PACKING	10.20
3		
4	TOTAL	28.8

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM. GEN. SPEC. FOR	50-0-1	DWG 20-4-286
2	ENAMEL, LUSTRELESS, QUICK DRYING	JAN-E-74	DWG 20-4-286
3	ENAMEL, (FOR) DRUMS AND OTHER METAL PRODUCTS, RUST-INHIBITING, ETC	TT-E-485	DWG 20-4-286
4	INK, STENCIL, OPAQUE, FOR MARKING NON-POROUS SURFACES, ETC.	TT-I-53B	DWG 20-4-286
5	LACQUER, ENAMEL, LUSTRELESS	JAN-L-73	DWG 20-4-286
6	PAINT, VARNISH, LACQUER AND RELATED MATERIALS, ETC	TT-P-141	JAN-L-73
7	SHIPMENT, MARKING, STANDARD SPECIFICATIONS FOR	100-2	DWG 20-4-286
8			
9			

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PACKING INSTRUCTIONS

INSERT FIN ASSEMBLY IN CRATE, SLEEVE END UP PLACE COVER ON CRATE AND SECURE WITH CLIPS.

MARKING INSTRUCTIONS

RECOAT WHERE NECESSARY WITH OLIVE DRAB RUST-INHIBITING ENAMEL TYPE I, II, OR IV.

LETTERS AND FIGURES TO BE APPROX AS SHOWN. ALL MARKING TO BE WITH YELLOW STENCIL INK.

A-INSERT MONTH AND YEAR LOADED.
 B-INSERT GROSS WEIGHT.
 C-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
 D-INSERT AIC SYMBOL ON OPPOSITE SIDE
 E-ORDNANCE INSIGNIA.
 F-INSERT AIC SYMBOL
 G-INSERT LOT NUMBER
 H-INSERT MANUFACTURER'S INITIALS OR SYMBOL ON INSIDE SURFACE OF BOTTOM
 K-INSERT M123 WHEN APPLICABLE.

SUPERSEDES 20-4-286 WITH CHANGE, MARCH 10, 1950.

FOR PACKING CRATE, SEE DWG. 76-16-269

NOTICE:-THIS DRAWING SHALL NOT BE USED NOR REPRODUCED EITHER WHOLLY OR IN PART, EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

PACKING AND MARKING OF CRATE FOR FIN ASSEMBLIES, AN-M109A1 AND M123. (500 LB SIZE).			
DECEMBER 15, 1942	CLASS	DIVISION	DRAWING FILE
REVISIONS	20	4	286
8 8-15-45			
9 3-10-50			
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
DECIMAL ±			
FRACTIONAL ±			
ANGULAR ±			
DRG. PERTAINS TO			
SUBMITTED:			
EXAMINED:			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:			
ORDNANCE DEPT., U. S. A.			

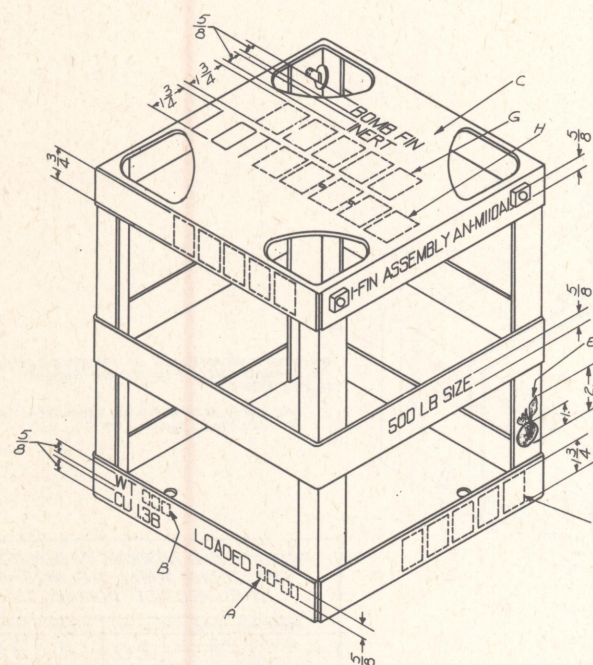
LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE-MARK	MATERIAL			APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX GROSS WT OF RAW STOCK PER 1000 ASSEMBLIES	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC NUMBER		
1									
2									
3									
4									
5					ENAMEL, OLIVE DRAB, RUST-INHIBITING	TYPE I, II, OR IV	TT-E-485		
6					INK, STENCIL, YELLOW		TF-I-558		(a)
7									
8									

(a) ALTERNATIVE MATERIAL:--YELLOW LACQUER ENAMEL, GRADE I OR II, SPEC JAN-L-73(a)
 (b) ALTERNATIVE MATERIAL:--YELLOW ENAMEL, GRADE I OR II, SPEC JAN-E-74

LINE NO	WEIGHTS (ESTIMATED)	
	PART	POUNDS
1	FIN ASSEMBLY	17.5
2	CRATE, PACKING	13.5
3		
4		
5		
6		
7	TOTAL	31.0

LIST OF SPECIFICATIONS			SPEC NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC FOR		50-0-1	DWG 20-4-287
2	ENAMEL, LUSTRELESS, QUICK DRYING		JAN-E-74	DWG 20-4-287
3	ENAMEL, FOR DRUMS AND OTHER METAL PRODUCTS, RUST-INHIBITING, ETC		TT-E-485	DWG 20-4-287
4				
5	INK, STENCIL, OPAQUE, FOR MARKING NON-POROUS SURFACES, ETC		TT-I-558	DWG 20-4-287
6	PAINT, VARNISH, LACQUER AND RELATED MATERIALS, ETC		TT-P-141	JAN-L-73
7	LACQUER, ENAMEL, LUSTRELESS		JAN-L-73	DWG 20-4-287
8	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR		100-2	DWG 20-4-287
9				

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.



PACKING INSTRUCTIONS
 INSERT FIN ASSEMBLY IN CRATE WITH SLEEVE END UP.
 PLACE COVER ON CRATE AND SECURE WITH THUMB SCREWS.

MARKING INSTRUCTIONS
 RECOAT WHERE NECESSARY WITH OLIVE DRAB RUST-INHIBITING ENAMEL, TYPE I, II, OR IV. LETTERS AND FIGURES TO BE APPROX AS SHOWN. ALL MARKING TO BE WITH YELLOW STENCIL INK.
 A-INSERT MONTH AND YEAR LOADED.
 B-INSERT GROSS WEIGHT.
 C-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
 D-INSERT A I C SYMBOL ON OPPOSITE SIDES.
 E-ORDNANCE INSGNIA.
 F-INSERT MANUFACTURER'S INITIALS OR SYMBOL ON UNDER SURFACE OF BOTTOM.
 G-INSERT A I C SYMBOL.
 H-INSERT LOT NUMBER.

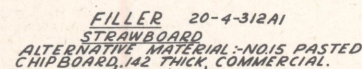
NOTICE--THIS DRAWING SHALL NOT BE USED NOR REPRODUCED EITHER WHOLLY OR IN PART EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

PACKING AND MARKING OF CRATE FOR FIN ASSEMBLY AN-M10A1 (500 LB SIZE).			
DECEMBER 15, 1941	CLASS	DIVISION	DRAWING
20	4	287	
REVISIONS			
6	8-15-45		
7	3-10-50		
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
DECIMAL ±			
FRACTIONAL ±			
ANGULAR ±			
DRG. PERTAINS TO			
DFTSMAN	TRACER	E.J.S.	RMB
CHECKER	A.C.J.	558	OF ACU.
SUBMITTED:			
EXAMINED:			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:			
D			
ORDNANCE DEPT., U. S. A.			

SUPERSEDES 20-4-287 WITH CHANGE, MARCH 10, 1950.

FOR PACKING CRATE SEE DWG TG-16-271

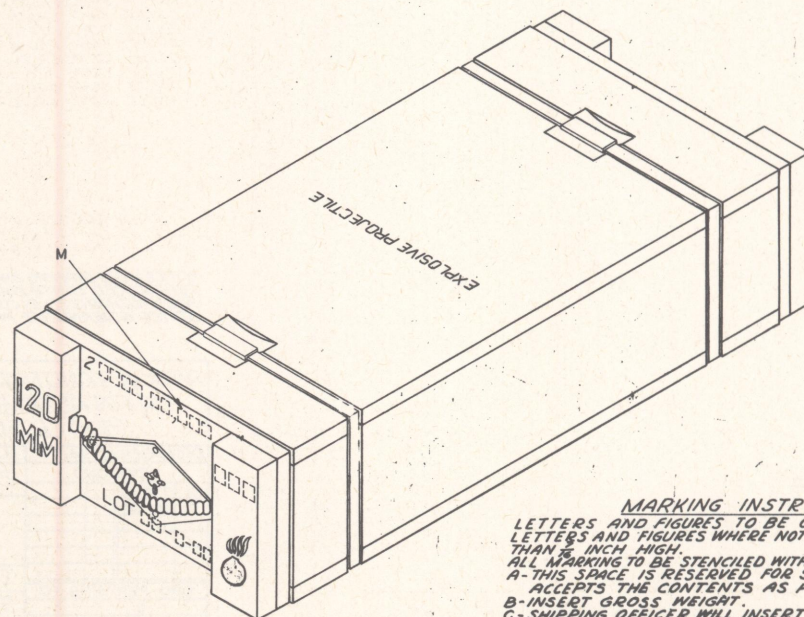
(A) - COAT WITH LIGHT BROWN LACQUER ENAMEL OR ENAMEL.
(B) - ALTERNATIVE - NO. 15 PASTED CHIPBOARD, .142 THICK, COMMERCIAL.
(C) - ALTERNATIVE - LACQUER ENAMEL, LIGHT BROWN, GRADE 1, SPEC. 3-162.
(D) - ALTERNATIVE - STEEL WIRE, GALVANIZED, 750 LB. KNOT STRENGTH, COMMERCIAL.
(E) - NOT REQUIRED WHEN ALTERNATIVE STRAPPING IS USED.



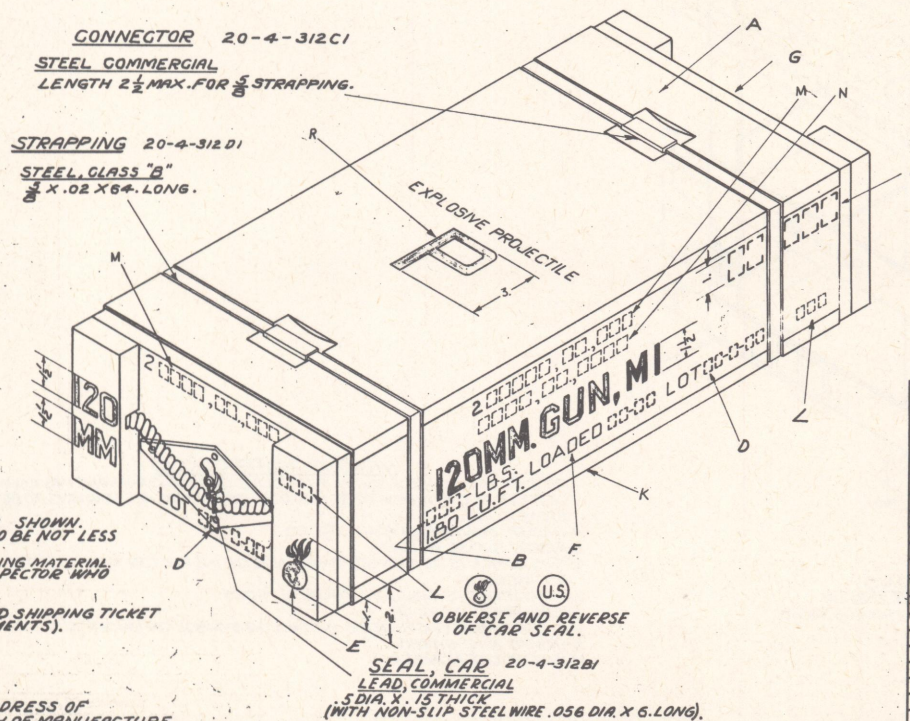
PACK ONE CONTAINER, COVER END UP AND THE OTHER CONTAINER, END DOWN. THERE ARE MORE FILLERS AS REQUIRED TO TIGHTLY PACK CONTENTS. ASSEMBLE LOOSE END, SECURE TIGHTLY WITH WING NUT, INSERT CAR SEAL IN CARRIAGE BOLT AS SHOWN AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGNS SHOWN. STRAP STRAP ACROSS ALL FOUR CORNERS OF BOX UNTIL STRAPPING CUTS INTO EDGES OF BOX. THEN SECURE WITH CONNECTORS.

CONNECTOR 20-4-312C1
COMMERCIAL
2 1/2 MAX. FOR 5 STRAPPING

STRAPPING 20-4-312 DI
STEEL GLASS "B"
5 X .02 X 64. LONG.



LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN.
 LETTERS AND FIGURES WHERE NOT DIMENSIONED, TO BE NOT LESS
 THAN 1/8 INCH HIGH.
 ALL MARKING TO BE STENCILED WITH YELLOW MARKING MATERIAL.
 A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO
 ACCEPTS THE CONTENTS AS PACKED.
 B-INSERT GROSS WEIGHT.
 C-INSERTING OFFICER WILL INSERT ADDRESS AND SHIPPING TICKET
 NUMBER (MAY BE OMITTED ON CARLOAD SHIPMENTS).
 D-INSERT LOT NUMBER.
 E-ORDNANCE INSIGNIA.
 F-INSERT MONTH AND YEAR LOADED.
 G-MARK BOTH ENDS ALIKE.
 H-INSERT A.I.C. CODE.
 K-MARK BOTTOM OF BOX WITH NAME AND ADDRESS OF
 BOX MANUFACTURER, AND YEAR AND MONTH OF MANUFACTURE.
 L-INSERT BURSTING CHARGE AS APPLICABLE.
 M-INSERT "SHELL, HE, MT3" OR "SHELL, HE, MT3 W/ SUPPLEMENTARY CHARGE" OR "PROJ. DUMMY T5," AS APPLICABLE.
 N-INSERT "FUZE, M.T., MGAI" IF APPLICABLE.
 R-MARK AS SHOWN WHEN PACKING SHELL, HE, MT3 W/ SUPPLEMENTARY CHARGE.



FOR PACKING BOX SEE DRG. 76-1-421.
FOR FIBER CONTAINER WITH FUZED SHELL, SEE DRG. 75-14-344

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

(b) THESE SPECIFICATIONS ARE NOT MANDATORY, BUT MAY BE USED BY THE CONTRACTOR.

PACKING AND MARKING OF PACKING BOX FOR THE
FOLLOWING SHELL, FOR 120MM. GUN, M1
(2 PER BOX) --
SHELL, H.E., M73, WITH M641 MECHANICAL TIME FUSE
PROJECTILE, DUMMY T5

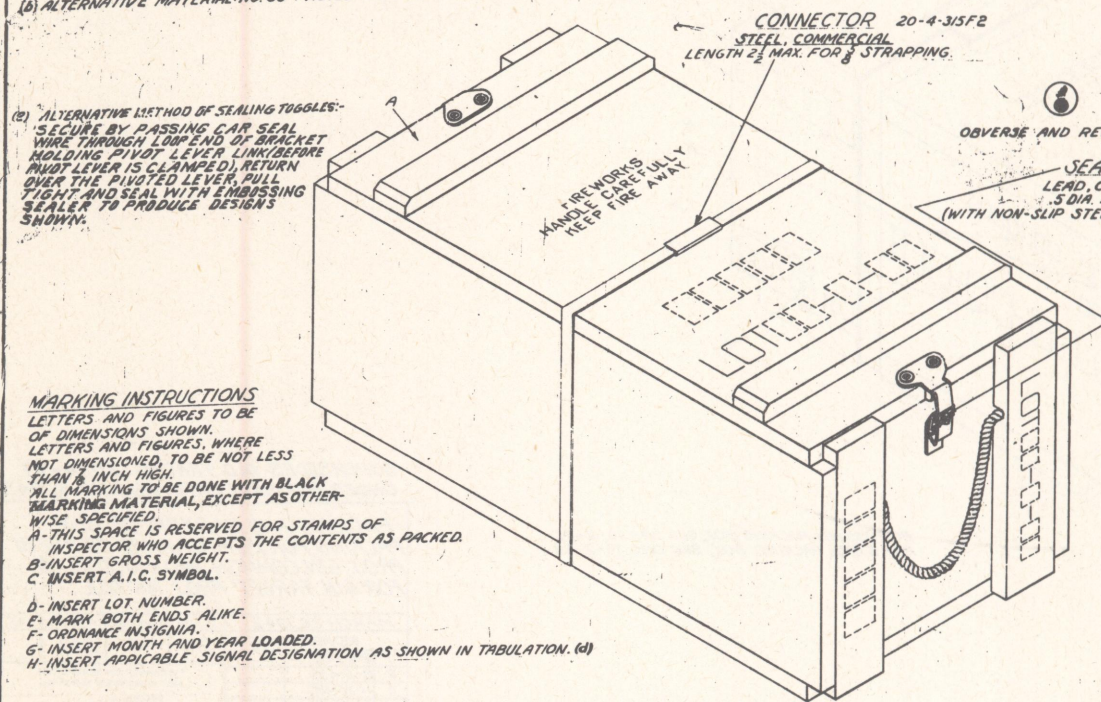
PACKING AND MARKING OF BOX, PACKING,
FOR 120MM SHELL, H.E, M73, AND
PROJECTILE DUMMY, T5

MARCH 3, 1942				CLASS		DIVISION		DRAWING		FILE	
REVISONS				20		4		312			
1 7-27-43											
2 8-15-45											
DRG. PERTAINS TO											
				D. TYPED		TRACED		ENGINEER			
				M. D.		M. D.		354			
				CHECKER		CHECKER		CHIEF DFTTMAN			
				G. E. F.		G. E. F.		M. T.			
				SURMISTED.							
				<i>Milwaukee</i> COL., ORD. DEPT. U. S. A.							
				EXAMINED: <i>H. W. Holder</i> LT. COL., ORD. DEPT. U. S. A.							
				APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: <i>Scott</i> COL., ORD. DEPT. U. S. A.							
D				ORDNANCE DEPT. U. S. A.							

SUPERSEDED BY 76-1-421 WITH CHANGE NOVEMBER 2, 1949

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQ'D PER COMPONENT	PIECE-MARK	SIZE OR FORM	MATERIAL	GRADE	SPEC. NUMBER	APPROX. UNIT WEIGHT (POUNDS)	REMARKS
1	CONNECTOR	1	20-4-315F	STRIP	STEEL		COMMERCIAL		
2	FILLER "A"	(a)	20-4-315A	SHEET	STRAWBOARD		50-11-69		(b)
3	FILLER "B"	(a)	20-4-315B	SHEET	STRAWBOARD		50-11-69		(b)
4	FILLER "C"	(a)	20-4-315C	SHEET	STRAWBOARD		50-11-69		(b)
5	FILLER "D"	2	20-4-315G		LEAD		COMMERCIAL		
6	SEAL, CAR	1	20-4-315E	STRIP	STEEL	TYPE I, CLASS B	QQ-S-781		
7	STRAPPING	2	20-4-315D	1/4 IN. TAPE	COTTON TAPE, ANY COLOR		DDD-T-86		
8	TRACE	2	20-4-315D	1/4 IN. TAPE	COTTON TAPE, ANY COLOR		DDD-T-86		
9					MARKING MATERIAL, BLACK	I, II, III OR IV	AXS-964		
10					MARKING MATERIAL, GREEN	I, II, III OR IV	AXS-964		
11					MARKING MATERIAL, RED	I, II, III OR IV	AXS-964		
12					MARKING MATERIAL, YELLOW	I, II, III OR IV	AXS-964		
13					WATERPROOF PAPER LINER	TYPE L-20RM	100-37		

(b) ALTERNATIVE MATERIAL-NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.



MARKING INSTRUCTIONS
LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN.
LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/8 INCH HIGH.
ALL MARKING TO BE DONE WITH BLACK MARKING MATERIAL, EXCEPT AS OTHERWISE SPECIFIED.
A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
B-INSERT GROSS WEIGHT.
C-INSERT A.I.C. SYMBOL.
D-INSERT LOT NUMBER.
E-MARK BOTH ENDS ALIKE.
F-ORDNANCE INSIGNIA.
G-INSERT MONTH AND YEAR LOADED.
H-INSERT APPLICABLE SIGNAL DESIGNATION AS SHOWN IN TABULATION. (d)

L-LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1 INCH WIDE AT CENTER FOR STRAPPING.

BOX MANUFACTURER'S NAME, ADDRESS AND DATE OF MANUFACTURE TO BE MARKED ON BOTTOM OF BOX WITH LETTERS AND FIGURES NOT MORE THAN 1/8 INCH HIGH.

(a) PACKING INSTRUCTIONS

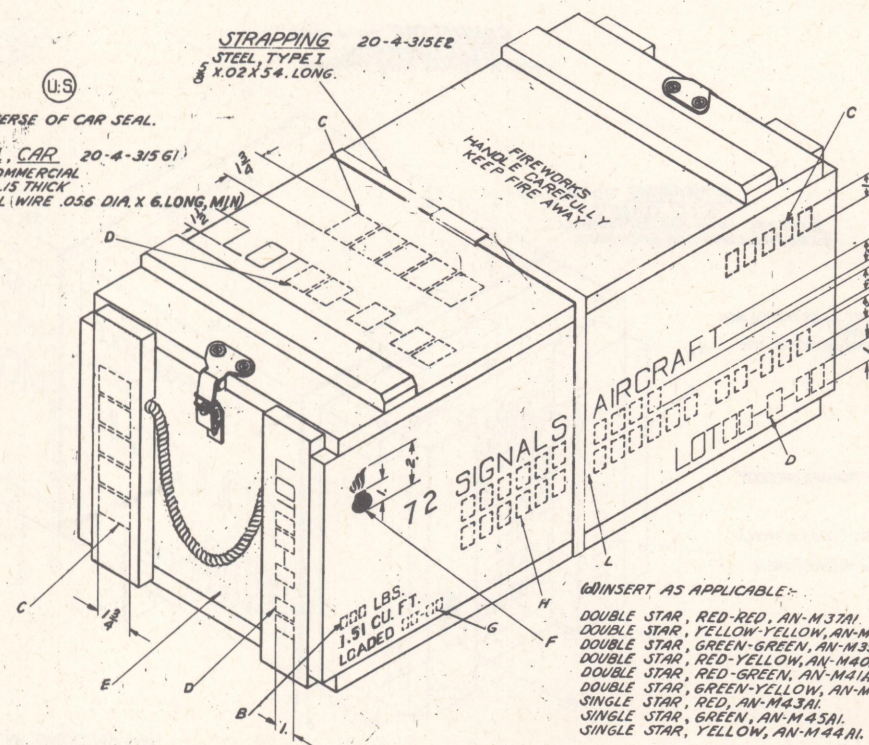
THE INTERIOR OF BOX TO BE LINED WITH WATERPROOF PAPER BAG LINER TYPE L-20RM. PACK CARTONS (CONTAINING SIGNALS) INTO LINER IN BOX IN 2 LAYERS, 3 IN EACH LAYER. ONE CARTON IN EACH LAYER IS TO BE PROVIDED WITH A TAPE TRACE PASSING UNDER A TAPE STRAP. THE CENTER OF THE CARTON WITH EXCESS TAPE EQUALLY DIVIDED ON SIDES. THE WATERPROOF PAPER BAG SHALL BE FABRICATED AND SEALED WITH WATER RESISTANT ADHESIVE TO ASSURE WATER RESISTANCE OF SEAMS AND CLOSURE. EQUAL THICKNESS OF PAPER IS TO BE INSERTED ONE OR MORE FILLERS AT SIDES AND ENDS, AND ONE OR MORE LARGE FILLERS ON TOP AS REQUIRED TO PACK CONTENTS TIGHTLY. CLOSE COVER AND FASTEN TOGGLES BY SNAPPING IN CLOSED POSITION. SECURE EACH TOGGLE BY PASSING CAR SEAL WIRE AROUND AND THROUGH ONE TOP CORNER OF LINK, ACROSS THE OUTSIDE FACE OF PIVOTED LEVER, DOWN AND THROUGH THE OPPOSITE CORNER OF LINK, AND RETURNING OVER PIVOTED LEVER, PASS WIRE THROUGH CAR SEAL, PULL TIGHT AND SEAL WITH EMBOSSEING SEALER TO PRODUCE DESIGNS SHOWN. (a) PLACE STRAPPING AROUND BOX IN POSITION SHOWN AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTOR.

FILLER "A" 20-4-315A2
STRAWBOARD (1/8 THICK)
11 1/2 X 12 1/2
ALTERNATIVE MATERIAL-NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

FILLER "B" 20-4-315B3
STRAWBOARD (1/8 THICK)
10 1/2 X 12 1/2
ALTERNATIVE MATERIAL-NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

FILLER "C" 20-4-315C3
STRAWBOARD (1/8 THICK)
10 1/2 X 11 1/2
ALTERNATIVE MATERIAL-NO. 35 PASTED OR PLAIN CHIPBOARD, .06 THICK, COMMERCIAL.

TRACE 20-4-315D
COTTON TAPE, ANY COLOR
1/4 INCH WIDE X 22 INCHES LONG.



LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

(d) INSERT AS APPLICABLE:-
DOUBLE STAR, RED-RED, AN-M37AI.
DOUBLE STAR, YELLOW-YELLOW, AN-M38AI.
DOUBLE STAR, GREEN-GREEN, AN-M39AI.
DOUBLE STAR, RED-YELLOW, AN-M40AI.
DOUBLE STAR, RED-GREEN, AN-M41AI.
DOUBLE STAR, GREEN-YELLOW, AN-M42AI.
SINGLE STAR, RED, AN-M43AI.
SINGLE STAR, GREEN, AN-M44AI.
SINGLE STAR, YELLOW, AN-M45AI.

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M37AI	SIGNAL AN-M38AI	SIGNAL AN-M39AI	SIGNAL AN-M40AI	SIGNAL AN-M41AI	SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
1	BOX (EMPTY)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
2	CARTONS, COMPLETE (6 EMPTY)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
3	FILLERS AND STRAPPING	.6	.6	.6	.6	.6	.6	.6	.6	.6
4	SIGNALS, COMPLETE (72)	25.2	25.2	30.6	25.2	27.9	27.9	19.4	18.8	23.1
5	TOTAL	49.1	49.1	54.5	49.1	51.8	51.8	43.3	42.7	47.0

SIGNAL AN-M42AI	SIGNAL AN-M43AI	SIGNAL AN-M44AI	SIGNAL AN-M45AI
POUNDS	POUNDS	POUNDS	POUNDS
20.	20.	20.	20.
3.3	3.3	3.3	3.3
.6	.6	.6	.6
27.9	19.4	18.8	23.1
51.8	43.3	42.7	47.0

LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE-MARK	MATERIAL			APPROXIMATE UNIT WEIGHT (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE		
1	CONNECTOR	3	20-4-317B	STRIP	STEEL	COMMERCIAL		(c)
2								
3	FILLER	(a)	20-4-317A	SHEET	STRAWBOARD	50-11-69		(b)
4								
5	STRAPPING	3	20-4-317C	STRIP	STEEL	CLASS "B"	QQ-S-781	(c)
6								
7					MARKING MATERIAL, YELLOW	AKS-964		
8		(a)		1 1/2 IN. (NO. 10) SCREWS, WOOD, FLAT HEAD, STEEL	COMMERCIAL			
9					LACQUER ENAMEL, LIGHT BROWN	I	3-162	(d)
10		2		5d	NAILS, BOX, STEEL WIRE	COMMERCIAL		

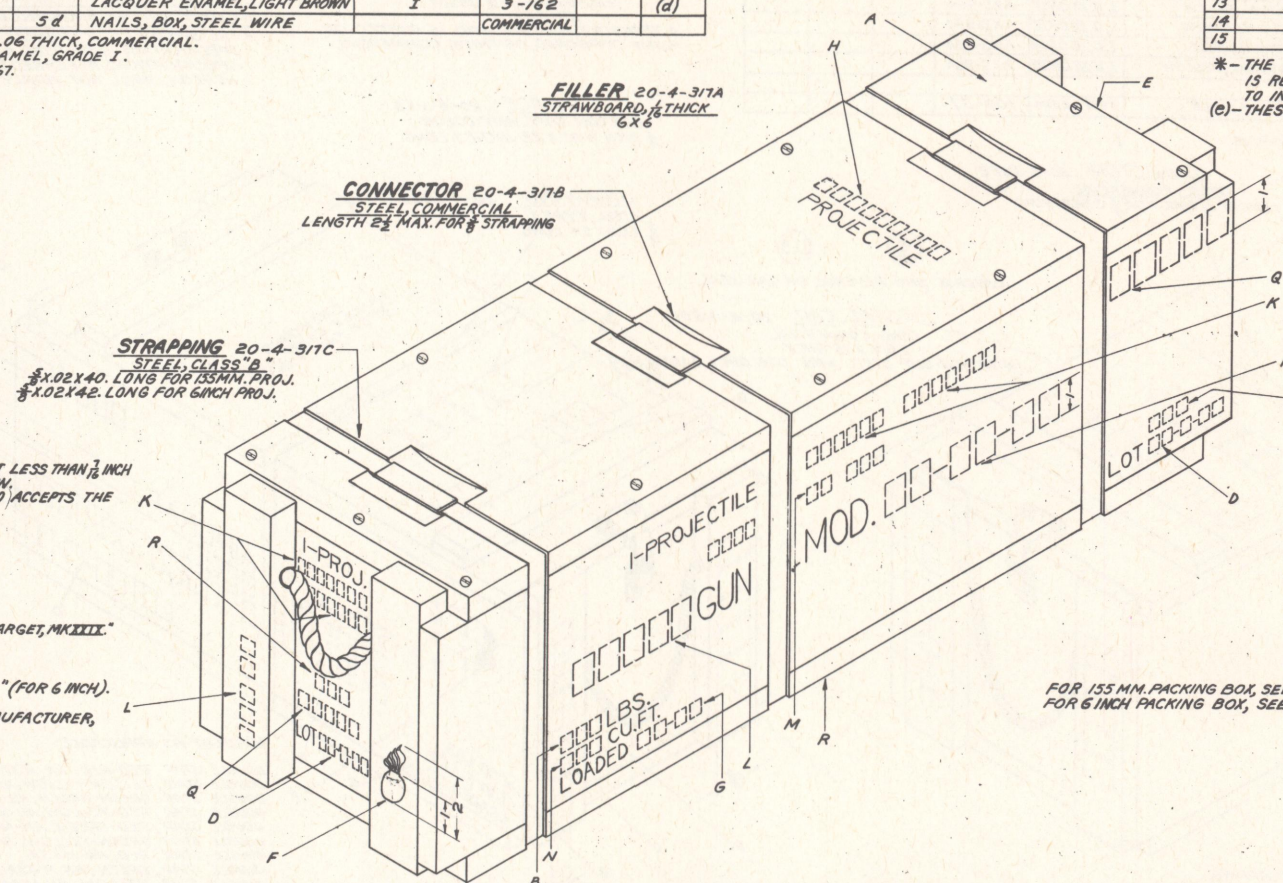
(b) ALTERNATIVE: NO. 35 CHIPBOARD, PASTED OR PLAIN, .06 THICK, COMMERCIAL.
 (c) COAT WITH LIGHT BROWN LACQUER ENAMEL OR ENAMEL, GRADE I.
 (d) ALTERNATIVE: ENAMEL, LIGHT BROWN, GRADE I, SPEC. 3-67.

LINE NO.	WEIGHTS (ESTIMATED)		
	PART	155MM.-LBS.	6INCH.-LBS.
1	BOX, SUPPORTS, ETC.	17.00	18.30
2	1-PROJECTILE	110.00	105.00
3	FILLER	1.00	1.00
4	TOTAL	118.00	124.30

LINE NO.	LIST OF SPECIFICATIONS		SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM. GENERAL SPEC. FOR		50-0-1	DRG. 20-4-317
2				
3				
4				
5	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	(c)	QQ-M-151	QQ-S-781
6	ENAMEL, LUSTRELESS, QUICK-DRYING FOR AMM.		3-67	DRG. 20-4-317
7	LACQUER ENAMEL, LUSTRELESS FOR AMM.		3-162	DRG. 20-4-317
8	MARKING MATERIAL, FOR STAINED WOODEN CRATES AND BOXES		AKS-964	DRG. 20-4-317
9	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR		3-1	3-67
10	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	(c)	100-2	DRG. 20-4-317
11	STRAPPING, FLAT, STEEL		QQ-S-781	DRG. 20-4-317
12	STRAWBOARD, (FOR PACKING AMMUNITION)	(c)	50-11-69	DRG. 20-4-317
13				
14				
15				

*- THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.
 (c)- THESE SPECIFICATIONS ARE NOT MANDATORY, BUT MAY BE USED BY THE CONTRACTOR.

MARKING INSTRUCTIONS
 LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN.
 LETTERS AND FIGURES WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/8 INCH HIGH. ALL MARKING TO BE WITH MARKING MATERIAL, YELLOW.
 A- THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
 B- INSERT GROSS WEIGHT.
 C- INSERT BURSTING CHARGE, IF APPLICABLE.
 D- INSERT LOT NUMBER.
 E- MARK BOTH ENDS ALIKE.
 F- ORDNANCE INSIGNIA.
 G- INSERT MONTH AND YEAR LOADED.
 H- INSERT "EMPTY" OR "EXPLOSIVE" AS APPLICABLE.
 K- INSERT "A.P. M112", "A.P. M112 BI", "COMMON, MK XXXIII" OR "TARGET, MK XXXIX".
 L- INSERT "6 INCH" OR "155 MM." AS APPLICABLE.
 M- INSERT "FUZE B.D. M60" IF APPLICABLE.
 N- INSERT 1.31 FOR 155MM. OR 1.52 FOR 6 INCH.
 P- INSERT "77, 17A18 10MI" (FOR 155MM.) OR "00, 03 & 05" (FOR 6 INCH).
 Q- INSERT A.I.C. CODE.
 R- MARK BOTTOM OF BOX WITH NAME AND ADDRESS OF MANUFACTURER, AND YEAR AND MONTH OF MANUFACTURE.



FOR 155 MM. PACKING BOX, SEE DRG. 76-2-81
 FOR 6 INCH PACKING BOX, SEE DRG. 76-2-82

(a) PACKING INSTRUCTIONS

PLACE COLLAR OVER NOSE OF PROJECTILE. LOCATE PROJECTILE IN BOX SO THAT BASE OF PROJECTILE IS BETWEEN CLEATS IN INSIDE END OF BOX. INSERT ONE OR MORE FILLERS BETWEEN PROJECTILE BASE AND BOX TO INSURE TIGHT PACKING. DRIVE WEDGES BETWEEN COLLAR AND ANGULAR CLEATS TO FIRMLY HOLD PROJECTILE IN PLACE. NAIL WEDGES IN PLACE. SECURE COVER WITH 1 1/2 INCH NO. 10 WOOD SCREWS (12 SCREWS IN PACKING 155MM. PROJECTILE AND 16 SCREWS IN PACKING 6 INCH PROJECTILE). PLACE STRAPPING IN GROOVES AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTORS.

SUPERSEDES OLD TRACING 20-4-317
 UNDER REVISION DATE AUGUST 5, 1943

PACKING AND MARKING OF BOX,
 PACKING FOR 155MM. A.P. M112 OR M112 BI
 PROJ. 6 IN. COMMON PROJ. MK XXXIII &
 FOR 6 IN. TARGET PROJ. MK XXXIX.

MARCH 26, 1942		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	317	
1	2-23-43				
2	8-5-43				
3	11-20-43				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED					
DECIMAL ±					
FRACTIONAL ±					
ANGULAR ±					
DRG. PERTAINS TO	CHECKER	TRACER	ENGINEER		
	J.R.T.	J.R.T.	J.R.T.		
SUBMITTED:					
Amgalla					
EXAMINED:					
R.F. Brennan					
CAPT. ORD. DEPT. U.S.A.					
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:					
R.F. Brennan					
COL. ORD. DEPT. U.S.A.					
ORDNANCE DEPT., U.S.A.					

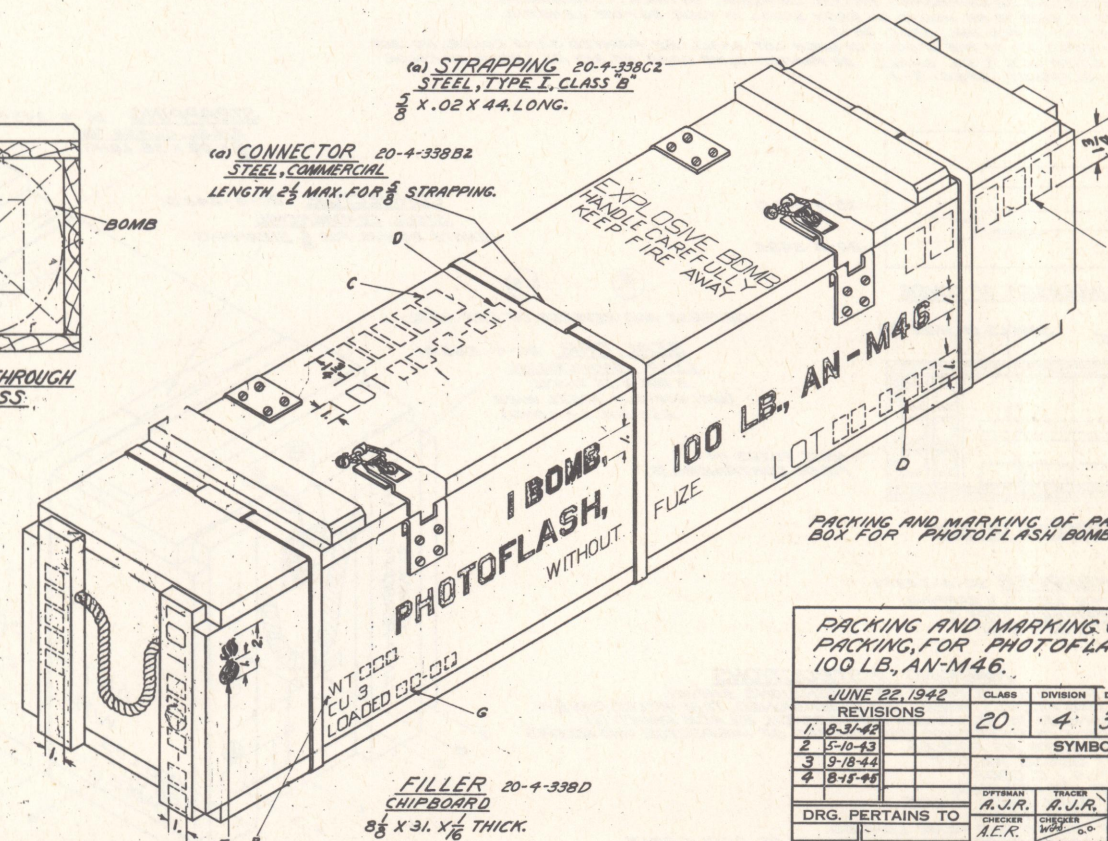
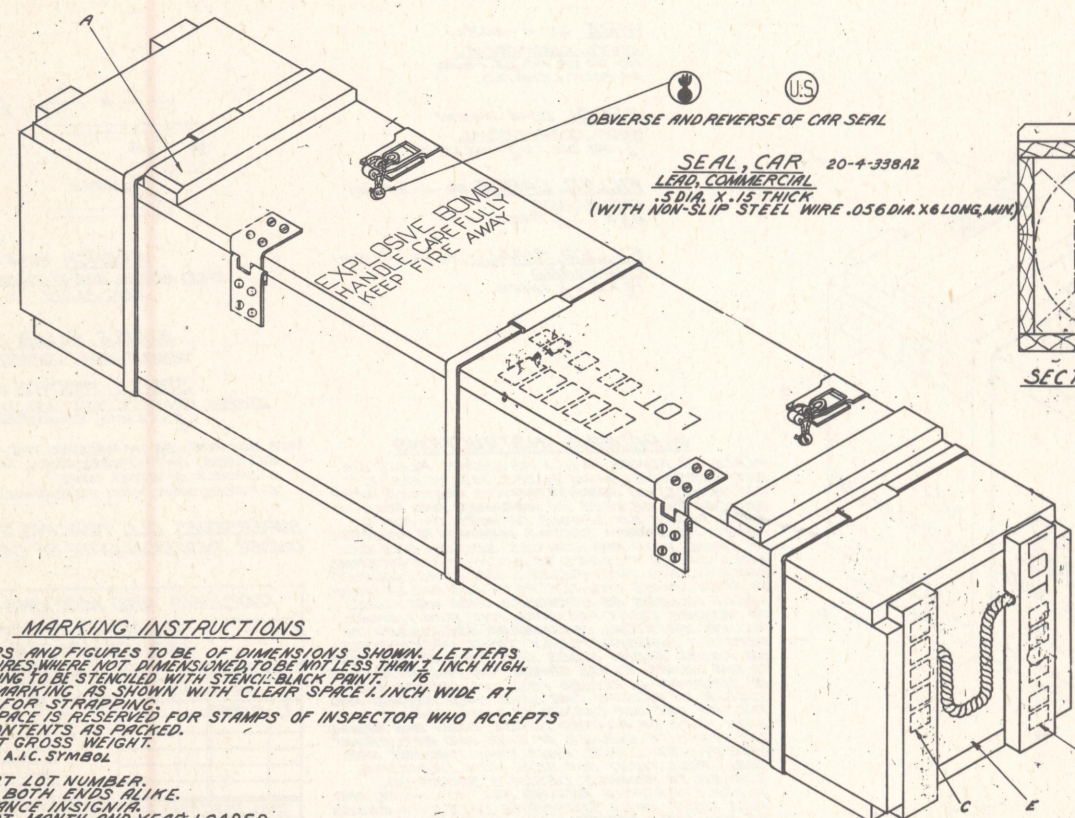
LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER OF COMPONENTS	PIECE-MARK	MATERIAL			SPEC. NUMBER	APPROXIMATE WEIGHT (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE			
1	CONNECTOR	3	20-4-338B	STRIP	STEEL		COMMERCIAL		(a)
2	FILLER	(d)	20-4-338D	SHEET	CHIPBOARD		50-II-86		(b)
3									
4	SEAL, CAR	2	20-4-338A	STRIP	LEAD		COMMERCIAL		
5	STRAPPING	3	20-4-338C	STRIP	STEEL	TYPE I, CLASS B	QQ-S-781		(a)
6									
7									
8					PAINT, STENCIL BLACK	TYPE I OR II	3-179		
9									
10									

(b) ALTERNATIVE MATERIAL: -NO.35 CHIPBOARD, PASTED OR FLAIN, .06 THICK, COMMERCIAL.

WEIGHTS (ESTIMATED)	
PART	POUNDS
1 BOX ASSEMBLY (EMPTY)	25.00
2 BOMB AND COMPONENTS	50.00
3 FILLERS, CONNECTORS AND STRAPPING	1.
4 ARMING WIRE ASSEMBLY (IN ENVELOPE)	.02
5	
6 TOTAL	76.02

LIST OF SPECIFICATIONS			
LINE NO.	SPEC. NUMBER	REQUIRED BY	
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG. 20-4-338
2			
3	METALS; GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151	QQ-S-781
4			
5	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1	3-179
6			
7	PAINT, STENCIL	3-179	DRG. 20-4-338
8			
9	STANDARD SPECIFICATIONS FOR MARKING SHIPMENTS	100-2	DRG. 20-4-338
10	CHIPBOARD (FOR PACKING AMMUNITION)	50-II-86	DRG. 20-4-338
11	STRAPPING, FLAT, STEEL	QQ-S-781	DRG. 20-4-338
12			
13			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.
† THESE SPECIFICATIONS ARE NOT MANDATORY BUT MAY BE USED BY THE CONTRACTOR.



PACKING AND MARKING OF PACKING BOX FOR PHOTOFLASH BOMB, M46.

MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES WHERE NOT DIMENSIONED TO BE NOT LESS THAN 1/2 INCH HIGH. ALL MARKING TO BE STENCILED WITH STENCIL BLACK PAINT. 16 LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1/2 INCH WIDE AT CENTER FOR STRAPPING.
A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
B-INSERT GROSS WEIGHT.
C-INSERT A.I.C. SYMBOL.
D-INSERT LOT NUMBER.
E-MARK BOTH ENDS ALIKE.
F-ORDNANCE INSIGNIA.
G-INSERT MONTH AND YEAR LOADED.
H-MANUFACTURER'S NAME, ADDRESS AND DATE OF MANUFACTURE TO BE MARKED ON BOTTOM OF BOX.

(d) PACKING INSTRUCTIONS
PLACE BOMB IN BOX WITH THE TAIL END OF E. MOUNT THE END OF BOX HAVING A MOUNTED RECESS IN THE BOTTOM AND COVER (INSERT BETWEEN NOSE END AND PASTING BAND OF BOMB ONE OR MORE FILLERS ON TOP AND SIDES, IS REQUIRED TO PACK CONTENTS TIGHTLY. FASTEN HASPS WITH SWIVELS AND SECURE BY PASSING CAR SEAL WIRES THROUGH EYELETS OF HASPS AND SWIVELS. PULL TIGHT AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGN SHOWN. PLACE STRAPPING AROUND BOX AS SHOWN AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTORS.
(c) PLACE ARMING WIRE ASSEMBLY (IN ENVELOPE) OVER FIN ASSEMBLY.

FOR PACKING BOX SEE DRG. 16-16-325.
FOR ARMING WIRE ASSEMBLY ENVELOPE SEE GA 2357 OR GA 2532.

PACKING AND MARKING OF BOX, PACKING, FOR PHOTOFLASH BOMB, 100 LB., AN-M46.

JUNE 22, 1942		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	338	7
1	8-31-42				
2	5-10-43				
3	9-18-44				
4	8-15-45				
SYMBOL					
DRG. PERTAINS TO		A.I.R. A.I.R. A.I.R. A.I.R. A.I.R.			
SUBMITTED		A.E.R. A.E.R. A.E.R. A.E.R. A.E.R.			
EXAMINED		A.E.R. A.E.R. A.E.R. A.E.R. A.E.R.			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE		A.E.R. A.E.R. A.E.R. A.E.R. A.E.R.			
D.		ORDNANCE DEPT. U.S.A.			

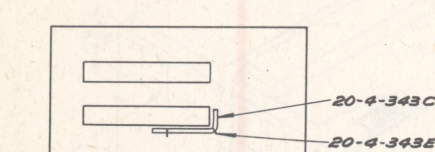
LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER OF COMPONENTS	PIECE-MARK	MATERIAL			APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF RAW MATERIALS	REMARKS
				SIZE OR FORM	KIND	GRADE			
1	CONNECTOR	2	20-4-343B	STRIP	STEEL		COMMERCIAL		
2	FILLER, LARGE	(6)	20-4-343K	SHEET	CHIPBOARD		50-11-86		(a)
3	FILLER, SMALL	(6)	20-4-343M	SHEET	CHIPBOARD		50-11-86		(a)
4	STAPLE, FILLER	(6)	20-4-343D		STAPLE WIRE		COMMERCIAL		
5	SEAL, CAR	1	20-4-343A		LEAD		COMMERCIAL		
6	STRAPPING	2	20-4-343G	STRIP	STEEL	CLASS "B"	QQ-S-781		
7	WIRE	624 FT.	20-4-343L		STEEL, NO. 24 OR NO. 25		COMMERCIAL		(b)(d)
8	WRENCH	1	20-4-343C	BAR	STEEL	WD 1010	57-107		
9	STAPLE, WRENCH	2	20-4-343E	1/4 IN. LONG	GALVANIZED POULTRY NETTING STAPLES		COMMERCIAL		
10	WRAPPER	(6)	20-4-343F	ROLL	PAPER	TYPE "C"	UU-P-270		
11	SPOOL	6	20-4-343H		WOOD		COMMERCIAL		(b)(d)
12					PAINT, STENCIL BLACK	FAST DRYING	3-50		(c)
13					WIRE COATING ENAMEL, LUSTRELESS		COMMERCIAL		(d)

WEIGHTS (ESTIMATED)	
PART	POUNDS
1 BOX ASSEMBLY (EMPTY)	18.00
2 MINES AND COMPONENTS (6)	60.40
3 FILLERS, CONNECTORS & STRAPPING	.80
4	
5	
6 TOTAL	73.20

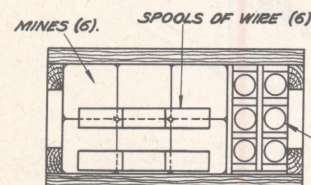
LIST OF SPECIFICATIONS			SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR		50-0-1	DRG. 20-4-343
2	CHIPBOARD, PLAIN, FOR AMMUNITION CONTAINERS	(f)	50-11-86	DRG. 20-4-343
3	PAPER, GENERAL SPECIFICATIONS		UU-P-31	UU-P-270
4	INK, BLACK, FOR WOODEN BOXES	(f)	36-3	DRG. 20-4-343
5	METALS; GENERAL SPECIFICATION FOR INSPECTION OF		QQ-M-151	57-107
6	PAINTS AND RELATED MATERIALS; GENERAL SPEC. FOR	(f)	3-1	3-50
7	PAINT, STENCIL BLACK	(f)	3-50	DRG. 20-4-343
8	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	(f)	100-2	DRG. 20-4-343
9	STEEL, CARBON AND ALLOY, BARS		57-107	DRG. 20-4-343
10	STRAPPING, FLAT, NAILLESS; STEEL, PAINTED AND ZINC-COATED, ETC.	(f)	QQ-S-781	DRG. 20-4-343
11				
12	PAPER, KRAFT, WRAPPING, PAPERFINED		UU-P-270	DRG. 20-4-343

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(f)-THESE SPECIFICATIONS ARE NOT MANDATORY BUT MAY BE USED BY THE CONTRACTOR.

(a)-ALTERNATIVE: NO. 35 CHIPBOARD, PASTED OR PLAIN, .06 THICK, COMMERCIAL.
(b)-104 FEET OF WIRE TO BE WOUND ON EACH SPOOL IN FOUR 26 FOOT LENGTHS.
(c)-ALTERNATIVE: BLACK INK, SPEC. 36-3.
(d)-WIRE ON 50% ± 5% OF THE SPOOLS IN EACH LOT SHALL BE PAINTED SAND COLOR, NO. 306 AND THE OTHER 50% ± 5% SHALL BE PAINTED OLIVE DRAB NO. 319 AS SHOWN ON COLOR CARD SUPPLEMENT, SPEC. 3-1.



UNDERSIDE OF COVER



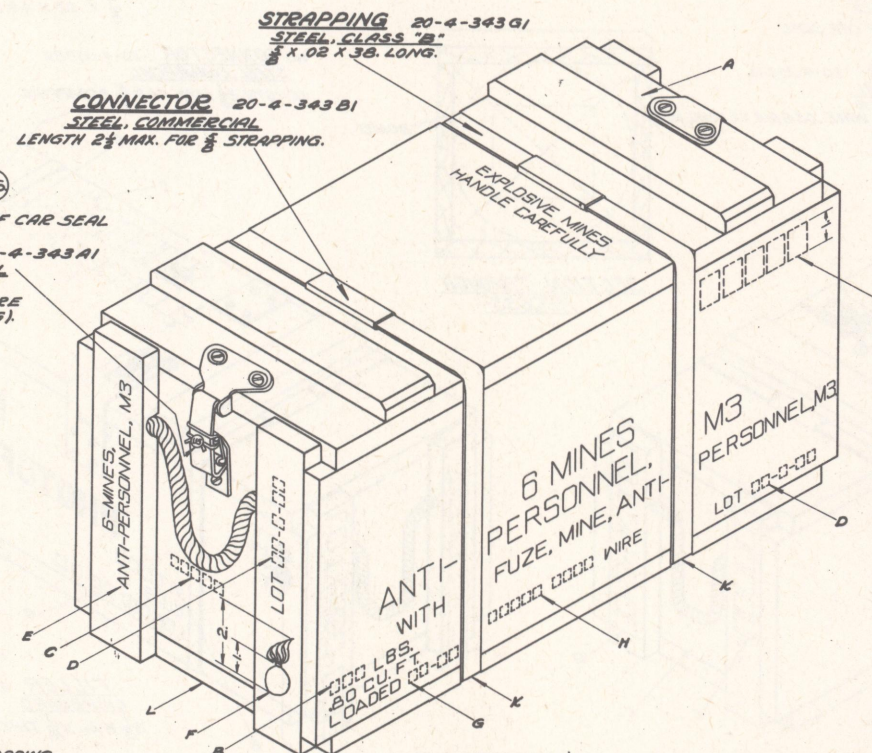
PACKING OF BOX

WRAPPER 20-4-343F1
PAPER, KRAFT, WRAPPING,
PAPERFINED, TYPE C
4 IN. X 6 IN.

MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN.
LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/8 IN.
ALL MARKING TO BE STENCILED WITH STENCIL BLACK PAINT. (f)
A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
B-INSERT GROSS WEIGHT.
C-INSERT A.I.C. CODE.
D-INSERT LOT NUMBER.
E-MARK BOTH ENDS ALIKE.
F-ORDNANCE INSIGNIA.
G-INSERT MONTH AND YEAR LOADED.
H-INSERT "OLIVE DRAB" OR "SAND COLOR" AS APPLICABLE.
K-LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1 INCH WIDE FOR STRAPPING.
L-MARK BOTTOM OF BOX WITH NAME AND ADDRESS OF BOX MANUFACTURER, AND YEAR AND MONTH OF MANUFACTURE.

(f)-ALTERNATIVE: MARKING MAY BE PRINTED WITH BLACK INK.



FOR MINE FUZE IN FIBER CONTAINER, SEE DRAWING 75-14-367.
FOR PACKING BOX, SEE DRAWING 76-1-459.

WIRE 20-4-343L1
STEEL, COMMERCIAL
NO. 24 OR NO. 25. FOUR
26 FOOT LENGTHS.

SPOOL 20-4-343H1
WOOD, COMMERCIAL
1 1/2 MAX. DIA. X 2 3/4 MAX. LONG.

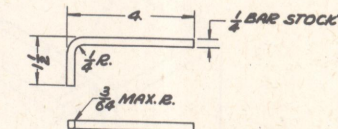
FILLER, LARGE 20-4-343K1
CHIPBOARD
4 1/4 X 7 X 1/8 THICK.

FILLER, SMALL 20-4-343M1
CHIPBOARD
1 1/2 X 5 X 1/8 THICK.

(6) PACKING INSTRUCTIONS

PLACE SIX MINES IN BOX AS SHOWN. PLACE SIX ANTI-PERSONNEL MINE FUZZES, M3 (IN FIBER CONTAINERS), IN COMPARTMENTS PROVIDED. WRAP EACH SPOOL OF WIRE IN WRAPPER AND FOLD IN ENDS. PLACE SIX SPOOLS OF WIRE ON TOP OF MINES AS SHOWN. SECURE WRENCH TO UNDERSIDE OF COVER WITH TWO STAPLES. SECURE ONE OR MORE SMALL FILLERS TO EACH OF THE INTERNAL COVER CLEATS WITH FILLER STAPLES AS REQUIRED TO PACK MINES TIGHTLY. ALSO ADD ONE OR MORE LARGE FILLERS AS REQUIRED OVER MINE FUZZES TO SECURE TIGHT PACKING. ANY ADDITIONAL FILLER MATERIAL CONSIDERED NECESSARY TO PRODUCE SATISFACTORY TIGHT PACKING WILL BE ADDED ALONG SIDES AND ENDS OF BOX NEXT TO THE MINES. CLOSE COVER. AND FASTEN TOGGLES BY SNAPPING IN CLOSED POSITION. SECURE EACH TOGGLE BY PASSING CAR SEAL WIRE AROUND AND THROUGH ONE TOP CORNER OF LINK, ACROSS OUTSIDE FACE OF PIVOTED LEVER, DOWN AND AROUND THE OPPOSITE CORNER OF LINK AND RETURNING OVER PIVOTED LEVER, PASS WIRE THROUGH CAR SEAL, PULL TIGHT AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGN'S SHOWN. (6) PLACE STRAPPING AROUND BOX, AS SHOWN, AND PULL TIGHT, UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTORS. THE SPOOLS INSERTED INTO EACH BOX WILL ALL CONTAIN THE SAME VALUE OF WIRE AND THE BOX WILL BE MARKED ACCORDINGLY. (SEE MARKING INSTRUCTIONS, NOTE H).

(9) ALTERNATIVE METHOD OF SEALING TOGGLES: SECURE EACH TOGGLE BY INSERTING CAR SEAL WIRE THROUGH LOOP IN PIVOTED LEVER ANCHOR ABOVE THE LINK, BEHIND SHAPING PIVOTED LEVER IN CLOSED POSITION. CLOSE PIVOTED LEVER AND PASS FREE END OF SEALING WIRE OVER OUTSIDE OF PIVOTED LEVER AND AROUND AND BEHIND LINK, AND FASTEN IN THE CAR SEAL ON OUTSIDE OF PIVOTED LEVER. SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGN'S SHOWN.



WRENCH 20-4-343C1
STEEL, W.D.I.D., ROUND CORNER SQUARE
ZINC PLATE.

STAPLE, FILLER 20-4-343D1
STAPLE WIRE, COMMERCIAL

STAPLE, WRENCH 20-4-343E1
STAPLE, POULTRY NETTING, GALVANIZED,
3/4 IN. LONG, COMMERCIAL.

THIS BOX FOR USE IN PACKING THE FOLLOWING:
6-MINES, ANTI-PERSONNEL, M3.
6-SPOOLS OF STEEL WIRE.
6-FUZZES, MINE, ANTI-PERSONNEL, M3.

SUPERSEDES OLD TRACING 20-4-343
UNDER REVISION DATE OF OCT. 30, 1943.

PACKING AND MARKING OF BOX, PACKING FOR MINES, ANTI-PERSONNEL, M3, COMPLETE.

SEPTEMBER 1, 1942	CLASS	DIVISION	DRAWING	FILE
REVISIONS	20	4	343	
1 10-30-43				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED				
DECIMAL ±				
FRACTIONAL ±				
ANGULAR ±				
DRG. PERTAINS TO				
SUBMITTED BY				
EXAMINED BY				
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE.				
ORDNANCE DEPT., U.S.A.				

LIST OF PARTS											WEIGHTS (ESTIMATED)		LIST OF SPECIFICATIONS				
LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE-MARK	MATERIAL				APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF RAW STOCK PER 1000 ASSEMBLIES	REMARKS	LINE NO.	PART		LINE NO.	SPEC. NUMBER	REQUIRED BY	
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER					POUNDS					
1	CONNECTOR	1	20-4-371A	STRIP	STEEL		COMMERCIAL			(f)	1	BOX (EMPTY)	16.24	1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC. FOR	50-0-1	DRG. 20-4-371
2											2	4 CARTONS, COMPLETE WITH FLARES, ETC.	24.44	2			
3	FILLER	(a)	20-4-371E	SHEET	STRAWBOARD		50-11-69			(b)	3			3	GEN. SPEC. FOR PACKAGING AND PACKING FOR OVERSEAS SHIPMENT	100-14	DRG. 20-4-371
4											4	STRAPPING AND CONNECTOR, FILLERS	5	4			
5	SEAL, CAR	2	20-4-371B		LEAD		COMMERCIAL				5			5	PACKAGING AND PACKING FOR OVERSEAS SHIPMENT, BOXES; WOOD, NAILED	JAN-P-106	DRG. 20-4-371
6	STRAPPING	1	20-4-371C	STRIP	STEEL	TYPE I, CLASS B	QQ-S-781			(e)	6	TOTAL	41.18	6	METALS; GENERAL SPECIFICATIONS FOR INSPECTION OF	QQ-M-151	QQ-S-781
7											7			7	PRINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1	3-179
8											8			8	PAINT, STENCIL	3-179	
9											9			9	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	100-2	DRG. 20-4-371
10											10			10	STRAPPING, FLAT; STEEL	QQ-S-781	DRG. 20-4-371
											11			11	STRAWBOARD (FOR PACKING AMMUNITION)	50-11-69	DRG. 20-4-371
											12			12	INK, FOR WOODEN BOXES	36-3	
											13			13			
											14			14			

(A) ALTERNATIVE MATERIAL: NO. 25 SUBGRADE, BASTER OR BLANK OF THICK COMMERCIAL

(d) ALTERNATIVE MATERIAL: - NO. 35 CHIPBOARD, PASTED OR PLAIN, .06 THICK, COMMERCIAL.

(e) ALTERNATIVE MATERIAL: - ROUND WIRE, STEEL, NO. 14 GAGE, 100,000 LBS. PER SQ. IN. TENSILE STRENGTH, SPEC. 100-14.

(f) NOT REQUIRED WHEN WIRE STRAPPING IS USED.

(g) ALTERNATIVE MATERIAL: - BLACK STENCIL PAINT, TYPE I OR II, SPEC. 3-179.

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

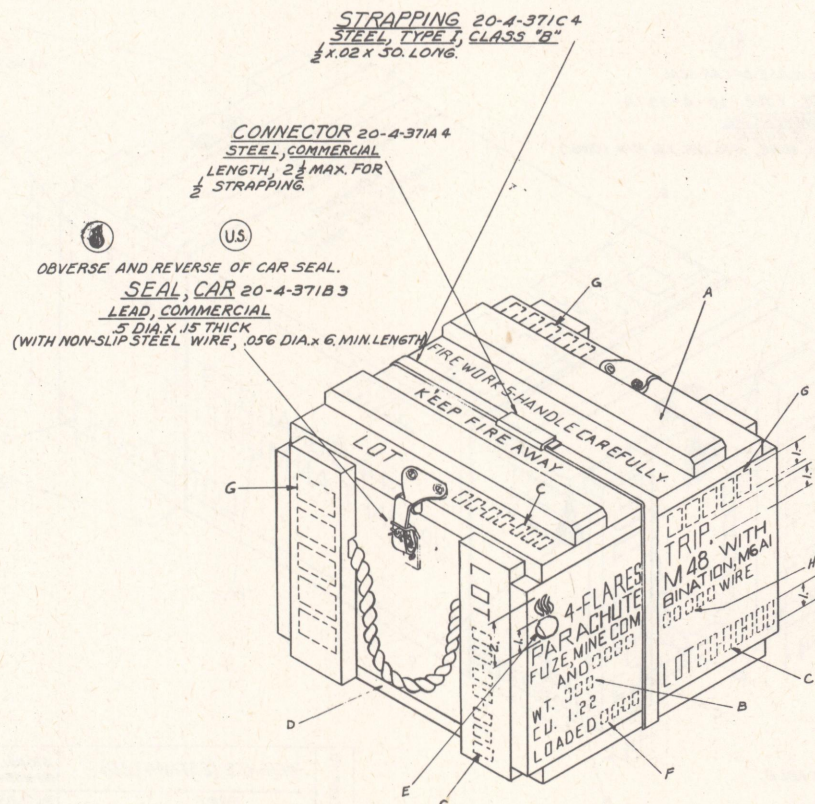
(a) PACKING INSTRUCTIONS

PACK 4 CARTONS IN BOX WITH MARKED SIDE UP. THE CARTONS IN EACH BOX WILL ALL CONTAIN WIRE OF THE SAME COLOR AND THE BOX WILL BE MARKED ACCORDINGLY (SEE MARKING INSTRUCTIONS, NOTE H). PLACE ONE OR MORE FILLERS ON TOP AS REQUIRED TO PACK CONTENTS TIGHTLY. ANY ADDITIONAL FILLER MATERIAL CONSIDERED NECESSARY TO PRODUCE SATISFACTORILY TIGHT PACKING WILL BE ADDED ALONG THE SIDES AND ENDS. CLOSE COVER AND FASTEN TOGGLES BY SNAPPING IN CLOSED POSITION. SECURE EACH TOGGLE (g) BY PASSING CAR SEAL WIRE AROUND AND THROUGH ONE TOP CORNER OF LINK ACROSS OUTSIDE SURFACE OF PIVOTED LEVER DOWN AND THROUGH THE OPPOSITE CORNER OF LINK AND RETURNING OVER PIVOTED LEVER. PASS WIRE THROUGH CAR SEAL, PULL TIGHT AND SEAL WITH EMBOSSING SEALER TO PRODUCE DESIGNS SHOWN. PLACE STRAPPING AROUND BOX AS SHOWN AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTOR. (g) ALTERNATIVE METHOD OF SEALING TOGGLES: - SECURE BY PASSING CAR SEAL WIRE THROUGH LOOP END OF BRACKET HOLDING PIVOT LEVER LINK (BEFORE PIVOT LEVER IS CLAMPED). RETURN OVER THE PIVOTED LEVER, PULL TIGHT AND SEAL WITH EMBOSSING SEALER TO PRODUCE DESIGNS SHOWN.

MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN $\frac{1}{8}$ INCH HIGH. ALL MARKING TO BE WITH BLACK INK. A - THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED. B - INSERT GROSS WEIGHT. C - INSERT LOT NUMBER. D - MARK BOTH ENDS ALIKE. E - ORDNANCE INSIGNIA. F - INSERT MONTH AND YEAR LOADED. G - THIS SPACE IS RESERVED FOR A.I.C. CODE. H - TO BE MARKED "OLIVE DRAB" OR "SAND COLOR" AS APPLICABLE. LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1 INCH WIDE FOR STRAPPING.

BOX MANUFACTURER'S NAME, ADDRESS AND DATE OF MANUFACTURE TO BE MARKED ON BOTTOM OF BOX IN LETTERS AND FIGURES NOT MORE THAN $\frac{1}{8}$ INCH HIGH.



FOR PACKING CARTON, SEE DRG. 76-16-345.
FOR PACKING BOX, SEE DRG. 76-16-347.

PACKING AND MARKING OF PACKING BOX FOR 4 PARACHUTE TRIP FLARES, M48, IN PACKING CARTONS

SUPERSEDES OLD TRACING 20-4-371 UNDER REVISION DATE OF JUNE 6, 1944

PACKING AND MARKING OF BOX, PACKING, FOR FLARES, TRIP PARACHUTE, M48, COMPLETE.

JUNE 23, 1943				CLASS	DIVISION	DRAWING	FILE
REVISIONS				20	4	371	
2	12-7-43						
3	6-6-44						
4	8-15-45						
				TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
				* DECIMAL ±			
				* FRACTIONAL ±			
				* ANGULAR ±			
DRG. PERTAINS TO				DFTSMAN	TRACER	ENGINEER	
				G.W.A.	G.W.A.		
				CHECKER			
				E.J.S.			
SUBMITTED:				A. Gallagher			
				LT. COL. ORG. DEPT. U.S.A.			
EXAMINED:				R.C. Walling			
				ORD. DEPT. U.S.A.			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:				C. S. Reed			
				COL., ORG. DEPT. U.S.A.			
D				ORDNANCE DEPT. U.S.A.			

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE-MARK	SIZE OR FORM	KIND	GRADE	SPEC. NUMBER	APPROXIMATE UNIT WEIGHT (POUNDS)	REMARKS
1	CONNECTOR	2	20-4-397F	STRIP	STEEL		COMMERCIAL		
2									
3	FILLER "A"	(a)	20-4-397B	SHEET	STRAWBOARD		50-11-69		(c)
4	FILLER "B"	(a)	20-4-397C	SHEET	STRAWBOARD		50-11-69		(c)
5	FILLER "C"	(a)	20-4-397D	SHEET	STRAWBOARD		50-11-69		(c)
6									
7	SEAL, CAR	2	20-4-397A		LEAD		COMMERCIAL		
8	STRAPPING	2	20-4-397G	STRIP	STEEL	TYPE I, CLASS "B"	QQ-S-781		
9									
10	TRACE	2	20-4-397E	$\frac{1}{4}$ " W. TAPE	COTTON TAPE, ANY COLOR		DDD-T-86		(d)
11					WATERPROOF, PAPER LINER	TYPE L-20RM	AXS-1246		
12									
13					INK, BLACK		36-3		(e)
14									
15									
16									

(c) ALTERNATIVE MATERIAL:- NO. 35 CHIPBOARD, PASTED OR PLAIN, .06 THICK, COMMERCIAL.
(d) 25 LBS. MIN. WARP STRENGTH.
(e) ALTERNATIVE MATERIAL:- BLACK STENCIL PAINT, TYPE I OR II, SPEC 3-179.

(a) PACKING INSTRUCTIONS.

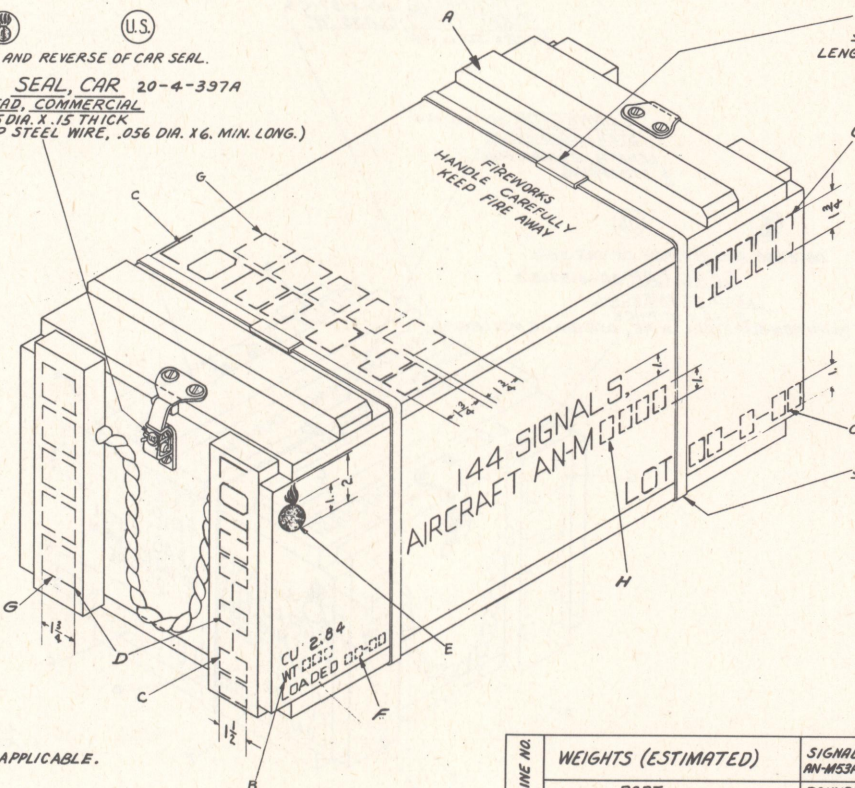
PACK CARTONS (CONTAINING SIGNALS) INTO BOX IN 2 LAYERS, 6 IN EACH LAYER. ONE CARTON IN EACH LAYER IS TO BE PROVIDED WITH A TAPE TRACE PASSING UNDER THE CENTER OF THE CARTON WITH EXCESS TAPE EQUALLY DIVIDED ON SIDES. WOOD EXTERIOR BOX CONTAINER IS TO BE LINED WITH WATERPROOF PAPER BAG LINER TYPE L-2 OR M. THE WATERPROOF PAPER BAG LINER SHALL BE FABRICATED AND SEALED WITH WATER RESISTANT ADHESIVE TO ASSURE WATER RESISTANCE OF SEAMS AND CLOSURE EQUAL TO THAT OF THE PAPER ITSELF. INSERT ONE OR MORE FILLERS AT SIDES AND ENDS, AND ONE OR MORE LARGE FILLERS ON TOP AS REQUIRED TO PACK CONTENTS TIGHTLY. CLOSE COVER AND FASTEN TOGGLES BY SNAPPING IN CLOSED POSITION. SECURE EACH TOGGLE BY PASSING CAR SEAL WIRE AROUND AND THROUGH ONE TOP CORNER OF LINK, ACROSS OUTSIDE FACE OF PIVOTED LEVER, DOWN AND AROUND THE OPPOSITE CORNER OF LINK AND RETURNING OVER PIVOTED LEVER. PASS WIRE THROUGH CAR SEAL, PULL TIGHT AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGNS SHOWN. (e) PLACE STRAPPING AROUND BOX, AS CLOSE TO CLEATS AS POSSIBLE AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTOR.

(e) ALTERNATIVE METHOD OF SEALING TOGGLES:- SECURE EACH TOGGLE BY INSERTING CAR SEAL WIRE THROUGH LOOP IN PIVOTED LEVER ANCHOR, ABOVE THE LINK, BEFORE SNAPPING PIVOTED LEVER IN CLOSED POSITION; CLOSE PIVOTED LEVER AND PASS FREE END OF SEALING WIRE OVER OUTSIDE OF PIVOTED LEVER AND AROUND AND BEHIND LINK, AND FASTEN IN THE CAR SEAL ON OUTSIDE OF PIVOTED LEVER. SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGNS SHOWN.

MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN $\frac{1}{16}$ INCH HIGH. ALL MARKING TO BE WITH BLACK INK.
A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
B-INSERT GROSS WEIGHT.
C-INSERT LOT NUMBER.
D-MARK BOTH ENDS ALIKE.
E-ORDNANCE INSIGNIA.
F-INSERT MONTH AND YEAR LOADED.
G-THIS SPACE IS RESERVED FOR A.I.C. SYMBOL.
H-INSERT "AN-M53AI", "AN-M54AI", "AN-M55AI", "AN-M56AI", "AN-M57AI", "AN-M58AI", AS APPLICABLE.
LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1 INCH WIDE FOR STRAPPING.
BOX MANUFACTURER'S NAME, ADDRESS AND DATE OF MANUFACTURE TO BE MARKED ON BOTTOM OF BOX.

OBVERSE AND REVERSE OF CAR SEAL.
SEAL, CAR 20-4-397A
LEAD, COMMERCIAL
.5 DIA. X .15 THICK
(WITH NON-SLIP STEEL WIRE, .056 DIA. X 6 MIN. LONG.)



LINE NO.	WEIGHTS (ESTIMATED)	SIGNAL AN-M53AI	SIGNAL AN-M54AI	SIGNAL AN-M55AI	SIGNAL AN-M56AI	SIGNAL AN-M57AI	SIGNAL AN-M58AI
	PART	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS
1	BOX (EMPTY)	29.5	29.5	29.5	29.5	29.5	29.5
2	CARTONS COMPLETE (12 EMPTY)	6.5	6.5	6.5	6.5	6.5	6.5
3	FILLERS, STRAPPING, ETC.	1.0	1.0	1.0	1.0	1.0	1.0
4	SIGNALS, COMPLETE (144)	35.8	37.4	38.1	37.8	36.5	37.2
5	TOTAL	72.8	74.4	75.1	74.8	73.5	74.2

FOR PACKING BOX SEE DRG. 76-16-364.
FOR PACKING CARTON SEE DRG. 76-1-570.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG. 20-4-397
2			
3			
4	INK, FOR WOODEN BOXES	36-3	DRG. 20-4-397
5	METALS; GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151	QQ-S-781
6			
7	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR, ETC.	3-1	3-179
8	PAINT, STENCIL	3-179	DRG. 20-4-397
9	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR #	100-2	DRG. 20-4-397
10	STRAPPING, FLAT; STEEL	# QQ-S-781	DRG. 20-4-397
11	STRAWBOARD (FOR PACKING AMMUNITION)	# 50-11-69	DRG. 20-4-397
12	BARRIERS, WATERPROOF	AXS-1246	DRG. 20-4-397
13	TAPE; COTTON, BLEACHED, DYED, OR GREY, ETC. #	DDD-T-86	DRG. 20-4-397
14			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

* THESE SPECIFICATIONS ARE NOT MANDATORY BUT MAY BE USED BY THE CONTRACTOR.

PACKING AND MARKING OF PACKING BOX FOR 144 OF THE FOLLOWING AIRCRAFT SIGNALS:- "AN-M53AI", "AN-M54AI", "AN-M55AI", "AN-M56AI", "AN-M57AI", OR "AN-M58AI" IN 12 PACKING CARTONS.

PACKING AND MARKING OF BOX, PACKING, FOR AIRCRAFT SIGNALS, "AN-M53AI" TO "AN-M58AI", INCLUSIVE.

AUGUST 31, 1943.		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	397	
1	9-11-44				
2	8-15-45				
SYMBOL					
DRG. PERTAINS TO					
E.M.S.		E.M.S.		E.M.S.	
SAG		SAG		SAG	
SUBMITTED BY					
MAJ. ORD. DEPT. U.S.A.					
EXAMINED BY					
LIEUT. L.F. ORD. DEPT. U.S.A.					
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE					
S.F. Stutling					
COL. ORD. DEPT. U.S.A.					
ORDNANCE DEPT., U.S.A.					

SUPERSEDED BY 76-1-1298 WITH CHANGE MARCH 23, 1950.

TABLE OF CARTRIDGE STORAGE CASES AND DATA FOR PACKING PROPELLING CHARGES.										
LINE NO.	CARTRIDGE STORAGE CASE			PROPELLING CHARGE DATA			PROP. CHARGE PER CASE (H)	ALT. FILLER FILLER TORQUE DIMENSION DIM. S (U)	DISC DIM. T	PROJ. WEIGHT POUNDS (P)
	DESIGNATION	DRAWING NO.	DISPLACEMENT	GUN OR HOWITZER DESIGNATION	CHARGE DESIGNATION	TYPE	DRG. NO.			
1										
2										
3	M14 A1	76-5-85 C	.87 CU FT	155 MM HOWITZER	M3	B & I	71-9-177	2 175-225 4 3 1/2	4 1/16	
4	M13 A1	76-5-85 A	.86 CU FT	155 MM HOWITZER	M4A1	B & I	71-9-180	1 200-250 6 4 1/4	6	
5										
6	M16 A1	76-5-85 E	1.6 CU FT	155 MM GUN	M19	B & I	71-9-94	1 200-250 6 4 3/4	6 1/16	
7										
8										
9	M18 A1	76-5-85 G	.99 CU FT	8 IN. HOWITZER	M1	B & I	71-9-165	1 200-250 6 4 3/4	6 1/16	
10	M19 A1	76-5-85 H	1.51 CU FT	8 IN. HOWITZER	M2	B & I	71-9-169	1 225-275 8 5 3/4	8 1/16	
11	M10A2	76-5-85K2	2.23 CU FT	240 MM HOWITZER	M23	B & I	71-9-190	1 225-275 8 5 3/4	8 1/16	
12										
13	M19A2	76-5-85L2	4.14 CU FT	8 IN. GUN, MK. 6 MOD. 3A2	M22	B & I	71-9-15E	1 225-275 9 6 1/16	9 5/16	240
14										
15	M16A1	76-5-85E	1.6 CU FT	155 MM GUN	M100 (3)	B & I	72-2-28	1 200-250 6 4 3/4	6 1/16	
16	M13A1	76-5-85A	.86 CU FT	155 MM HOWITZER	M2 (3)	B & I	72-2-54	2 200-250 6 4 1/4	6	
17	M7A1	76-5-85Q	1.82 CU FT	6 IN. GUNS	M17	SS	71-9-31	1 200-250 6 4 3/4	6 1/16	105
18										
19	M7A1	76-5-85Q	1.82 CU FT	6 IN. GUNS	M10 (3)	SS	72-2-84	1 200-250 6 4 3/4	6 1/16	90
20										
21	M7A1	76-5-85Q	1.82 CU FT	6 IN. GUNS	M16	SS	71-9-31	1 200-250 6 4 3/4	6 1/16	100
22	M20A1	76-5-85N	3.74 CU FT	8 IN. GUN, M1	M13	B & I	71-9-227	1 225-275 8 6 1/16	8 1/16	240
23	M20A1	76-5-85N	3.74 CU FT	8 IN. GUN, MK. 6 MOD. 3A2	M5 (3)	B & I	71-2-72	1 225-275 8 6 1/16	8 1/16	240
24	M10A2	76-5-85K	2.23 CU FT	8 IN. GUN, M1	M7 (3)	B & I	72-2-78	1 225-275 8 6 1/16	8 1/16	240
25	M19A1	76-5-85H	1.51 CU FT	8 IN. HOWITZER	M4 (3)	B & I	72-2-68	1 225-275 8 5 3/4	8 1/16	240
26	M10A2	76-5-85K	2.23 CU FT	240 MM HOWITZER	M12 (3)	4 SECTION 72-2-86		1 225-275 8 6 1/16	8 1/16	240

(a) PACKING INSTRUCTIONS

PACKING MATERIAL AT TIME OF PACKING SHALL HAVE MAXIMUM MOISTURE CONTENT OF 9% FOR PAPER AND FIBERBOARD AND 8% FOR WOOD. INSERT LINING AND PLACE DISC ON BOTTOM OF CASE. APPLY IGNITER PROTECTOR CAPS ON PROPELLING CHARGE TO AGREE WITH INSTRUCTIONS ON DRAWINGS 71-9-34 OR 71-9-155. PLACE CHARGE IN CASE WITH IGNITER END AT BASE OF CASE. PLACE ONE OR MORE DISCS AND WOOD FILLERS (20-4-422 C) AND ONE TOP WOOD FILLER (20-4-422 D) ON TOP OF CHARGE AS REQUIRED TO PACK TIGHTLY. ASSEMBLE COVER AND TIGHTEN HANDLE TO MEET TORQUE REQUIREMENTS SHOWN IN TABLE. THE CLOSED ASSEMBLY MUST WITHSTAND AN AIR PRESSURE OF 2 TO 3 POUNDS PER SQ. IN. FOR A PERIOD OF 1 MINUTE WITHOUT LEAKAGE. AFTER TESTING, COAT THREADS OF THE TEST HOLE PLUG WITH GRAPHITE GREASE AND ASSEMBLE PLUG TIGHTLY IN THE COVER. SECURE CLAMP SCREW TO SPIDER WITH CAR SEAL AS SHOWN AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGN SHOWN. CUT OFF EXCESS SEAL WIRE.

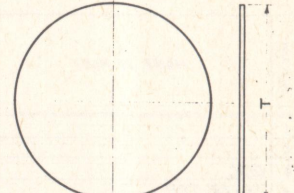
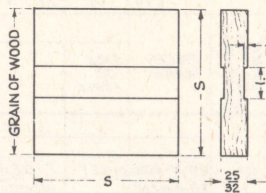
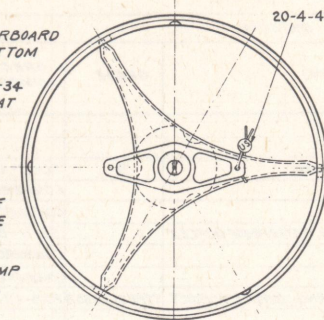
- (1) PROJECTILE WEIGHTS ARE GIVEN FOR SEACOAST PROPELLING CHARGES ONLY.
 (9) DENOTES DUMMY PROPELLING CHARGE.
 (H) TORQUE REQUIREMENT IN INCH POUNDS.

MARKING INSTRUCTIONS

LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/16 IN. HIGH. ALL MARKING TO BE WITH YELLOW STENCIL INK. INCREASED SPACING PERMITTED FOR CASES OVER 37 INCHES LONG. ALL DIMENSIONS ARE APPROXIMATE.
 A - INSERT A.I.C. SYMBOL (ON BOTH SIDES AND RIM OF CASE. MARKING ON SIDES TO BE 180° APART).
 C - INSERT GUN OR HOW. DESIGNATION, AS APPLICABLE.
 D - INSERT PROJECTILE WEIGHT AS INDICATED.
 E - INSERT MUZZLE VELOCITY WHEN PROJECTILE WEIGHT IS SHOWN, EXCEPT WHEN DUMMY PROPELLING CHARGES ARE PACKED.
 F - INSERT PROPELLING CHARGE DESIGNATION.
 H - INSERT POWDER LOT NUMBER.
 K - INSERT YEAR OF MANUFACTURE.
 L - INSERT PLACE AND DATE (MONTH AND YEAR) OF PACKING.
 M - INSERT WEIGHT.
 N - INSERT CUBIC DISPLACEMENT.
 P - ORDNANCE INSIGNIA.
 Q - INSERT NUMBER OF CHARGES PACKED.
 R - INSERT "DUMMY" WHEN APPLICABLE.
 J - INSERT "SMOKELESS POWDER FOR CANNON OR DUMMY CHARGES" AS APPLICABLE.

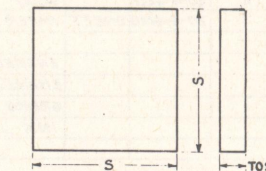
ENCIRCLE CASE WITH 3 IN. WIDE BAND OF GRADE I ENAMEL (APPLICABLE COLOR) WHEN PACKING CHARGES SHOWN IN THE FOLLOWING TABLE:-

CHARGE	COLOR OF BAND
155MM.HOW.M3 (GREEN BAG)	GREEN
155MM.HOW.M4A1 (WHITE BAG)	WHITE
8 INCH HOW.M1 (GREEN BAG)	GREEN
8 INCH HOW.M2 (WHITE BAG)	WHITE



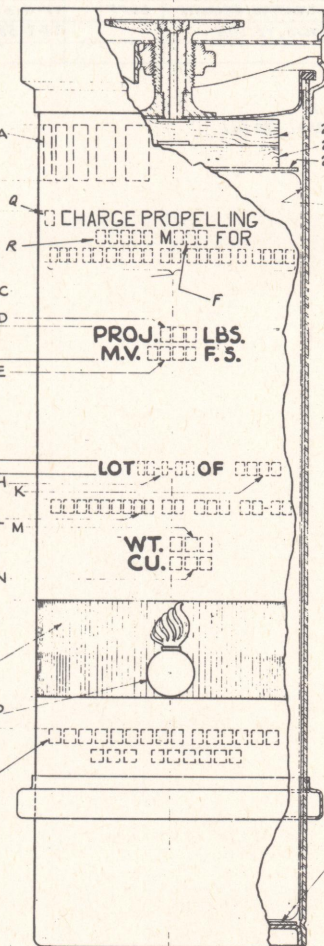
FILLER, TOP WOOD 20-4-422 B

DISC 20-4-422 D 5 SOLID FIBERBOARD, BOARD NO. II



FILLER 20-4-422 C WOOD

OBVERSE AND REVERSE OF CAR SEAL
SEAL, CAR 20-4-422 E
 LEAD, COMMERCIAL
 .5 DIA. X .15 THICK (WITH NON-SLIP STEEL WIRE, .056 DIA. X 8 1/2 LONG)



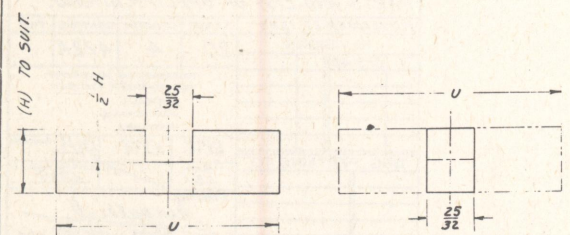
LINING 20-4-422 A
 WATERPROOF DUPLEX KRAFT WRAPPING PAPER LINING MUST BE OF LENGTH EQUAL TO THAT OF INTERIOR OF CASING AND OF SUFFICIENT WIDTH TO ALLOW 4 INCH LAP ON INSIDE CIRCUMFERENCE.

LINING, ALTERNATIVE 20-4-422 G5
 DUPLEX ASPHALT KRAFT LINING PAPER, TYPE I, CLASS B LINING MUST BE OF LENGTH EQUAL TO THAT OF INTERIOR OF CASING AND OF SUFFICIENT WIDTH TO ALLOW 4 INCH LAP ON INSIDE CIRCUMFERENCE.

LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER
1	PACKING AND MARKING	20-4-422
2	LIST OF PARTS AND LIST OF SPECS.	20-4-422A
3		

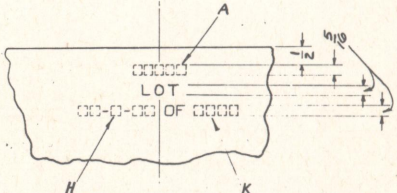
PACKING AND MARKING OF CARTRIDGE STORAGE CASES, FOR PROPELLING CHARGES

NOVEMBER 27, 1943		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	422	
1	6-1-43				
2	5-1-43				
3	6-12-43				
4	6-15-45				
5	8-9-48				
DRG. PERTAINS TO		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED DECIMAL 5 FRACTIONAL 1/16 ANGULAR 1/2			
SUBMITTED		DFTMAN H.T.L. TRACER D.C.S. ENGINEER			
CHECKED		J.B. SENIOR ENGINEER			
APPROVED		AUGALLOE MAJOR, ORG. DEPT. U.S.A.			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE		ORD. DEPT. U.S.A.			
76-5-85		COL. ORG. DEPT. U.S.A.			
SCALE: 1/2		ORDNANCE DEPT., U.S.A.			



DOT AND DASH LINES REPRESENT METHOD OF ASSEMBLING ALTERNATIVE FILLER.

FILLER, ALTERNATIVE 20-4-422 F5 WOOD



MARKING INSIDE OF RIM

LIST OF PARTS										REMARKS
LINE NO.	NAME OF PART	NUMBER REQD. PER COMPONENT	PIECE-MARK	SIZE OR FORM	MATERIAL			APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WGT. OF RAW STOCK PER 1000 ASSEMBLIES	
					KIND	GRADE	SPEC. NUMBER			
1										
2										
3	DISC	(a)	20-4-422D	SHEET	FIBERBOARD	B	50-11-111			
4	FILLER, TOP	1	20-4-422B		WOOD		COMMERCIAL			
5	FILLER	(a)	20-4-422C		WOOD		COMMERCIAL			
6	LINING	(a)	20-4-422A	SHEET	KRAFT PAPER, WATERPROOF DUPLEX		50-11-88			
7	SEAL, CAR	1	20-4-422E		LEAD		COMMERCIAL			
8	FILLER, ALTERNATIVE	2	20-4-422F		WOOD		COMMERCIAL			
9	LINING, ALTERNATIVE	1	20-4-422G	SHEET	PAPER LINING, DUPLEX ASPHALT	TYPE I, CLASS B	PXS-1212			(b)
10										
11					ENAMEL, GREEN NO.322	I	JAN-E-74			
12					ENAMEL, WHITE	I	JAN-E-74			
13					GREASE, LUBRICATING, GRAPHITE	SOFT	VV-G-671			
14					INK, STENCIL, YELLOW		TT-I-558			(c)
15										

(a) SEE PACKING INSTRUCTIONS, DRG. 20-4-422
(b) FOR USE WITH 8 INCH GUN, 8 INCH HOWITZER AND 240 MM HOWITZER ONLY.
(c) ALTERNATIVE MATERIAL:- LACQUER ENAMEL, GRADE I OR III, YELLOW, SPEC JAN-L-73 (d).
(d) ALTERNATIVE MATERIAL:- ENAMEL, GRADE I OR III, YELLOW, SPEC JAN-E-74.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC. FOR	50-0-1	DRG. 20-4-422
2	ASPHALT, FOR USE IN MANUFACTURE OF FIBER CONTAINERS	3-160	50-11-88
3	CASES, CARTRIDGE STORAGE	50-60-1	DRG. 20-4-422
4	GREASE, LUBRICATING, GRAPHITE	VV-G-671	DRG. 20-4-422
5	LUBRICANTS AND LIQUID FUELS; GENERAL SPECIFICATIONS	VV-L-791	VV-G-671
6	LINING, PAPER, CARTRIDGE STORAGE CASE.	PXS-1212	DRG. 20-4-422
7	ENAMEL, LUSTRELESS, QUICK-DRYING	JAN-E-74	DRG. 20-4-422
8	PAINTS AND RELATED MATERIALS; GENERAL SPEC. FOR	3-1	JAN-E-74
9	FIBERBOARD, WATERPROOF, SOLID	50-11-111	DRG. 20-4-422
10	INK, STENCIL; OPAQUE, FOR MARKING NON-POROUS SURFACES, ETC	TT-I-558	DRG. 20-4-422
11	LACQUER, ENAMEL, LUSTRELESS	JAN-L-73	DRG. 20-4-422
12	PAPER; GENERAL SPECIFICATIONS	UU-P-31	50-11-88
13	PAPER; KRAFT, DUPLEX, WATERPROOF WRAPPING (FOR AMM. CONTAINERS)	50-11-88	DRG. 20-4-422
14			
15			
16	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	100-2	DRG. 20-4-422
17			
18			
19			
20			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

PACKING AND MARKING OF CARTRIDGE STORAGE CASES, FOR PROPELLING CHARGES. LIST OF PARTS AND LIST OF SPECIFICATIONS.					
NOVEMBER 27, 1943		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	422A	
1 8-9-48					
		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
DRG. PERTAINS TO		OFFMAN K.L.M.	TRACER K.L.M.	ENGINEER J.B.	ENGINEER J.B.
		SUBMITTED: <i>Angallagh</i>			
		MAJOR, ORG. DEPT. U.S.A.			
		EXAMINED: <i>Angallagh</i>			
		COL., ORG. DEPT. U.S.A.			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: <i>Angallagh</i>			
		COL., ORG. DEPT. U.S.A.			
D		ORDNANCE DEPT., U.S.A.			

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQUIRED PER COMPONENT	PIECE MARK	MATERIAL				APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. CROSS WT. OF MAIN SPECIFICATION ASSEMBLIES
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER		
1									
2									
3									
4	SEAL CAR	2	20-4-435A		LEAD		COMMERCIAL		
5	PAD	4	20-4-435B	SHEET	CELOTEX		COMMERCIAL		
6									
7					PAINT, STENCIL YELLOW		3-179		
8					ENAMEL, OLIVE DRAB		3-181		

LINE NO.	PART	WEIGHTS (ESTIMATED)		LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
		WITH FUZES	WITHOUT FUZES				
1	BOX (EMPTY)			1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG 20-4-435
2	MINES, AT, HE, LIGHT, M7AI (8)			2	ENAMEL, OLIVE DRAB, RUST-INHIBITING	3-181	DRG 20-4-435
3	8 FUZES, CHEMICAL, MINE, AT, M7AI, 2 CARTONS	9.75		3	PAINT, STENCIL	3-179	DRG 20-4-435
4	8 FUZES, MINE, AT, TT, IN TWO CARTONS			4	BOX, METAL, AMMUNITION, M156	AMS-1674	DRG 20-4-435
5	MINES, AT, LIGHT, PRAC, M10 (12)			5	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1	3-179
6	CELOTEX PADS (4) OR (6)			6			
	TOTAL			7	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	100-2	DRG 20-4-435
				8			
				9			
				10			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

(b)(a) PACKING INSTRUCTIONS

PLACE 8 MINES IN THE FOUR CENTER COMPARTMENTS LEAVING THE TWO END COMPARTMENTS OPEN. MINES ARE TO BE PLACED IN THE COMPARTMENTS SO THAT THE PRESSURE PLATES OF 4 MINES FACE EACH END OF THE BOX. CELOTEX PADS (PC MK 20-4-435B) ARE THEN TO BE PLACED IN POSITION BETWEEN EACH TWO MINES IN THE FOUR COMPARTMENTS.

A CANVAS BANDOLEER IS TO BE WRAPPED AROUND EACH CARTON OF FOUR FUZES AND ONE CARTON IS TO BE PLACED IN EACH END OF BOX. THE ENDS OF THE BANDOLEERS SHALL BE EXPOSED TO PROVIDE EASY REMOVAL OF THE CARTONS. PLACE 8 MINE COVERS (PC MK 75-14-416C) ON TOP OF CONTENTS OF BOX.

(c) CLOSE COVER AND SNAP COVER SPRING CLIPS IN CLOSED POSITION. INSERT COTTER PINS AND SECURE AS SHOWN. PASS CAR SEAL WIRES THROUGH EACH COTTER PIN AND COVER STRAP, PULL TIGHT AND SEAL WITH EMBOSSING SEALER TO PRODUCE DESIGNS SHOWN.

(5) CARRYING HANDLES ARE TO BE PACKED SEPARATELY IN THE BOX INSTEAD OF BEING ATTACHED TO THE MINES.

MARKING INSTRUCTIONS

TOUCH UP, WHERE NECESSARY, WITH OLIVE DRAB ENAMEL. LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES, WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/8 INCH HIGH.

ALL MARKING TO BE STENCILED WITH YELLOW STENCIL PAINT.

A - THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.

B - A. I. C. SYMBOL

C - LOT NUMBER

D - ORDNANCE INSCINIA

E - MARK BOTH ENDS ALIKE.

F - CROSS WEIGHT.

G - MONTH AND YEAR LOADED.

H - MARK AS APPLICABLE (K), MARK BOTTOM OF BOX WITH 1/2 LETTERS AND FIGURES, M DESIGNATION AND LOT NUMBER (INCLUDING INITIALS OR SYMBOL OF MANUFACTURER) AND YEAR OF MANUFACTURE

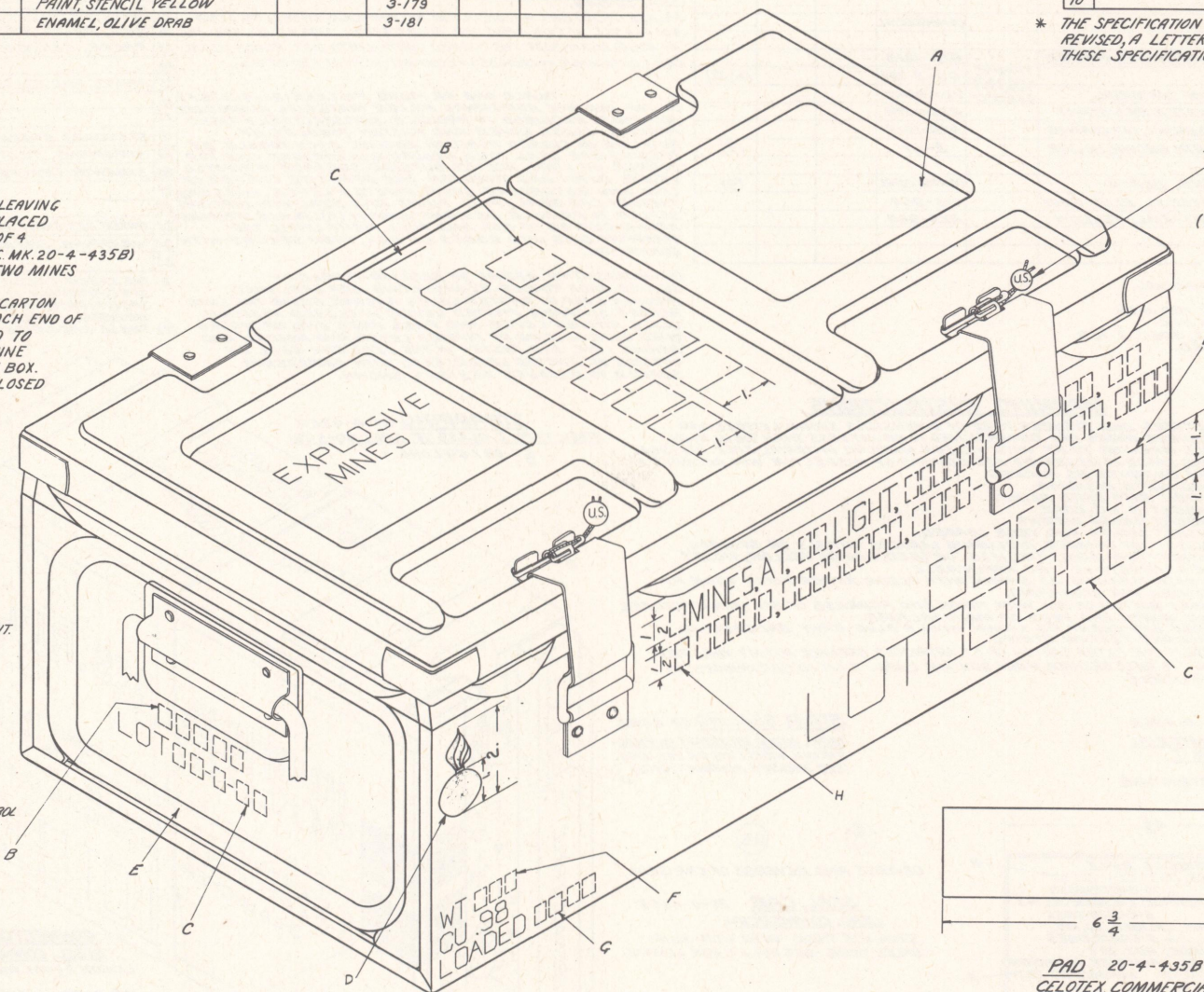
(b) PACKING INSTRUCTIONS

FOR PACKING 12 MINES WITHOUT FUZES

PLACE 2 MINES IN EACH OF THE SIX COMPARTMENTS. MINES ARE TO BE PLACED IN THE COMPARTMENTS SO THAT THE PRESSURE PLATES OF 6 MINES FACE EACH END OF THE BOX. CELOTEX PADS (PC MK 20-4-435B) ARE THEN TO BE PLACED IN POSITION BETWEEN EACH TWO MINES IN THE SIX COMPARTMENTS. ADDITIONAL CELOTEX PADS MAY BE PLACED IN EACH END TO PRODUCE SATISFACTORY TIGHT PACKING.

PLACE 12 MINE COVERS (PC MK 75-14-416C) ON TOP OF CONTENTS OF BOX. (t) (5)

K - 8 MINES, AT, HE, LIGHT, M7AI, 8 FUZES, MINE, CHEMICAL, AT, M600 OR 8 MINES, AT, HE, LIGHT, M7AI, 8 FUZES, MINE, AT, TT, OR 12 MINES, AT, LIGHT, PRAC, T9, WITHOUT FUZES



OBVERSE AND REVERSE OF CAR SEAL.
SEAL CAR 20-4-435A
LEAD, COMMERCIAL
3 DIA. X 15 THICK
(WITH NON-SLIP STEEL WIRE, .056 DIA. X 6 MIN. LENGTH)

PACKING AND MARKING APPLIES TO THE FOLLOWING:
8 - MINES, AT, HE, LIGHT, M7AI, WITH 8 FUZES, MINE, CHEMICAL, AT, M600
8 - MINES, AT, HE, LIGHT, M7AI, WITH 8 FUZES, MINE, AT, TT
12 - MINES, AT, LIGHT, PRAC, T9, WITHOUT FUZES

PACKING AND MARKING OF BOX, METAL, AMMUNITION, M156

JUNE 9, 1944		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	435	
1	8-15-45				
		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
DRG. PERTAINS TO		OFFICER	CHECKER	ENGINEER	
		W.L.	J.M.Y.		
		SUBMITTED			
		EXAMINED			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
		C. S. Reed by a.s.			
		COL, ORDN. DEPT. U.S.A.			
		ORDNANCE DEPT., U.S.A.			

FOR METAL BOX ASSEMBLY SEE DRG. 76-1-625.
FOR PACKING AND MARKING OF FUZE CARTON SEE DRG. 76-1-1029
FOR MINE COVERS SEE DRG. 75-14-416.
BANDOLEERS OBTAINED FROM QUARTERMASTER CORPS.

SCALE, 3/4

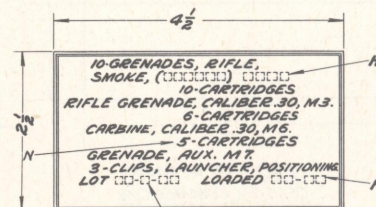
LIST OF PARTS									
LINE NO.	NAME OF PART	QUANTITY	PIECES	SIZE OF FORM	MATERIAL	GRADE	SPECIFICATION NUMBER	APPROXIMATE UNIT WEIGHT (POUNDS)	REMARKS
1	CONNECTOR	1	20-4-436H	STRIP	STEEL		COMMERCIAL		(b) (h)
2	FILLER	(2)	20-4-436F	SHEET	STRAWBOARD		50-11-69		(c)
3	LABEL	1	20-4-436D	SHEET	WHITE GUMMED PAPER		COMMERCIAL		(d) (e)
4	SEAL, CAR	2	20-4-436E		LEAD		COMMERCIAL		
5	STRIP, SEALING	1	20-4-436C	ROLL	TAPE, WATER RESISTANT, GUMMED		AXS-1213		
6	STRAPPING	1	20-4-436G		STEEL		QQ-5-781		(b) (k)
7	WRAPPER	1	20-4-436A	SHEET	GREASE PROOF MATERIAL		AXS-1074		
8					ADHESIVE, WATER RESISTANT		AXS-1015		
9					COMPOUND, SEALING, DIP COATING		AXS-1015		
10					ENAMEL, EARTH BROWN, NO. 302	I	3-67		(f)
11					INK, PRINTERS, BLACK		COMMERCIAL		(g)
12					MARKING MATERIAL, BLUE-GRAY		AXS-964		
13					MARKING MATERIAL, YELLOW		AXS-964		

(b) - COAT WITH EARTH BROWN, NO. 302 ENAMEL OR LACQUER ENAMEL.
 (c) - ALTERNATIVE: NO. 35 CHIPBOARD, PASTED OR PLAIN, .06 THICK, COMMERCIAL.
 (d) - WEIGHT (UNGUMMED) 32 LBS. PER 1000 SHEETS, 17 X 22.
 (e) - LABEL MAY BE OMITTED AND REQUIRED INFORMATION PRINTED ON TOP WITH BLACK PRINTERS INK, OR MARKED ON TOP WITH BLACK MARKING INK.
 (f) - ALTERNATIVE: LACQUER ENAMEL, EARTH BROWN, NO. 302, GRADE I, SPEC. 3-162.
 (g) - USE BLACK MARKING INK, SPEC. 36-2 WHEN LABEL IS OMITTED.
 (h) - NOT REQUIRED WHEN ALTERNATIVE STRAPPING IS USED.
 (k) - ALTERNATIVE: WIRE STRAPPING PER SPEC. 100-14.

MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES WHERE NOT DIMENSIONED TO BE NOT LESS THAN 1/16 IN. HIGH.
 ALL MARKING TO BE WITH YELLOW MARKING MATERIAL, SPEC. AXS-964.
 A - THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
 B - ORDNANCE INSIGNIA.
 C - MARK BOTH ENDS ALIKE.
 D - INSERT A-I, C, CODE.
 E - INSERT GROSS WEIGHT.
 F - INSERT MONTH AND YEAR LOADED.
 G - INSERT LOT NUMBER, INCLUDING LOADERS INITIALS OR SYMBOL.
 H - INSERT "WP" (MISAI), "NG" (M20 "DE" (RED, GREEN, YELLOW, VIOLET OR ORANGE) M22 "AS APPLICABLE".
 K - LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1 INCH WIDE AT CENTER FOR STRAPPING.
 L - MARK BOTTOM OF BOX WITH NAME AND ADDRESS OF BOX MANUFACTURER AND MONTH AND YEAR OF MANUFACTURE.
 M - MARK END CLEAR AS SHOWN WITH A BLUE-GRAY BACKGROUND AND ONE YELLOW STRIPE.
 N - PACK ONE EXTRA CARTON OF 5 CARTRIDGES, GRENADE AUX. M7 WHEN PACKING T12 RIFLE GRENADE. MARK BOX AND LABEL 5 OR 10 CARTRIDGES, AS APPLICABLE.

WRAPPER 20-4-436A
 GREASE PROOF MATERIAL
 GRADE "C", TYPE I
 21 X 43
 (SEE PACKING INSTRUCTIONS).



LABEL 20-4-436D1
 PAPER, WHITE GUMMED
 PRINT LABEL WITH BLACK PRINTERS INK.
 SIZE OF TYPE TO BE APPROX. AS SHOWN.

STRIP, SEALING 20-4-436C
 TAPE, WATER RESISTANT, GUMMED
 3 IN. MIN. WIDTH X 105 INCHES LONG.
 (SEE PACKING INSTRUCTIONS).

SEAL, CAR 20-4-436E
 LEAD, COMMERCIAL
 .5 DIA. X .15 THICK WITH NON-SLIP
 STEEL WIRE, .055 DIA. X 6 MIN. LENGTH.

FILLER 20-4-436F
 STRAWBOARD 1/8 THICK, 6 3/4 X 14 1/2

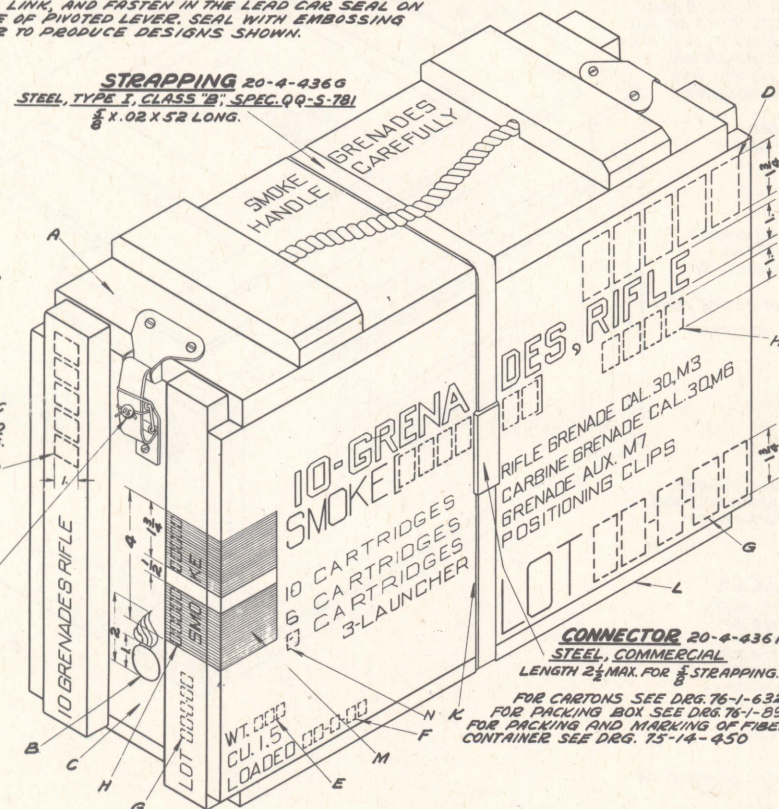
(a) PACKING INSTRUCTIONS

PLACE 10 GRENADES PREPACKED IN FIBER CONTAINERS M141 IN INNER CARTON AND ASSEMBLE THE INNER CARTON TRAY IN THE END OF THE CARTON WITH THE 1/2 INCH LEGS EXTENDING INTO THE CORNERS OF THE CARTON AND THE FACE OF THE TRAY BEARING AGAINST THE END OF THE FIBER CONTAINERS. PLACE 3 LAUNCHER POSITIONING CLIPS IN PAPER ENVELOPE BETWEEN THE INNER CARTON TRAY AND THE END OF THE CARTON. CLOSE CARTON AND APPLY 3" GUMMED PAPER TAPE OVER ALL CARTON JOINTS AND OVER MANUFACTURER JOINT IN ACCORDANCE WITH SPEC. 100-14 (PAGE 145, FIG. 45).
 INTERIOR CARTON TO BE INCLOSED IN ONE OF TWO METHODS.
 (1) WRAP CARTON IN WRAPPER (20-4-436A) AND IMMERSE IN DIP COATING, SPEC. AXS 1015, PER A.S.F. MANUAL M406, SEC. 20, PARAGRAPH D5 AND F.
 (2) HEAT SEAL CARTON IN REYNOLDS METALS A-20 OR EQUAL HEAT SEALED BAG.
 PLACE IN OUTER CARTON, CLOSE WITH APPLICATION SEALING STRIP 20-4-436C AS EXPLAINED FOR INNER CARTON. APPLY THE LABEL (20-4-436D) AND INSERT THE PACKED CARTON INTO BOX. PLACE METAL CAN CONTAINING CARTRIDGES IN COMPARTMENT AT END OF BOX.

PLACE ONE OR MORE FILLERS (20-4-436F) ON TOP AND ANY ADDITIONAL FILLER MATERIAL ALONG SIDES AND ENDS, REQUIRED TO PRODUCE SATISFACTORILY TIGHT PACKING. CLOSE COVER AND FASTEN TUGGLES BY SHAPPING IN CLOSED POSITION. SECURE EACH TUGGLE BY PASSING CAR SEAL WIRE AROUND AND THROUGH ONE TOP CORNER OF LINK, ACROSS OUTSIDE SURFACE OF PIVOTED LEVER, DOWN AND THROUGH THE OPPOSITE CORNER OF LINK AND RETURNING OVER PIVOTED LEVER. PASS WIRE THROUGH CAR SEAL, PULL TIGHT AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGNS SHOWN (A). PLACE STRAPPING AROUND CENTER OF BOX AND PULL TIGHT UNTIL THE STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTOR.

(h) - ALTERNATIVE METHOD OF SEALING TUGGLES: SECURE EACH TUGGLE BY INSERTING CAR SEAL WIRE THROUGH LOOP IN PIVOTED LEVER ANCHOR ABOVE THE LINK BEFORE SHAPPING PIVOTED LEVER IN CLOSED POSITION. CLOSE PIVOTED LEVER AND PRESS FREE END OF SEALING WIRE OVER OUTSIDE OF PIVOTED LEVER AND AROUND AND BEHIND LINK, AND FASTEN IN THE LEAD CAR SEAL ON OUTSIDE OF PIVOTED LEVER. SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGNS SHOWN.

STRAPPING 20-4-436G
 STEEL, TYPE I, CLASS "B", SPEC. QQ-5-781
 5/8 X .02 X 52 LONG.



CONNECTOR 20-4-436H
 STEEL, COMMERCIAL
 LENGTH 2 1/2 MAX. FOR 5/8 STRAPPING.
 FOR CARTONS SEE DRG. 76-1-632.
 FOR PACKING BOX SEE DRG. 76-1-892.
 FOR PACKING AND MARKING OF FIBER CONTAINER SEE DRG. 75-14-450.

LIST OF SPECIFICATIONS

LINE NO.	SPECIFICATION NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1 DRG. 20-4-436
2	A.S.F. MANUAL	M 406 DRG. 20-4-436
3	COMPOUND, SEALING, DIP COATING	AXS-1015 DRG. 20-4-436
4	ENAMEL, LUSTRELESS, QUICK-DRYING FOR AMMUNITION	3-67 DRG. 20-4-436
5	INK, MARKING (FOR MARKING AMMUNITION)	36-2 DRG. 20-4-436
6	LACQUER ENAMEL, LUSTRELESS, FOR AMMUNITION	3-162 DRG. 20-4-436
7	MARKING MATERIAL (FOR STAINED WOODEN CRATES & BOXES)	AXS-964 DRG. 20-4-436
8	METALS, GENERAL SPECIFICATION FOR INSPECTION OF (t)	QQ-M-151 QQ-5-781
9	PACKAGING & PACKING FOR OVERSEAS SHIPMENTS, GEN. SPEC. 100-14	100-14 DRG. 20-4-436
10	TAPE, WATER-RESISTANT, GUMMED	AXS-1213 DRG. 20-4-436
11	PAPER, GENERAL SPECIFICATIONS	UU-P-31 AXS-840
12	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1 AXS-964
13	STANDARD SPECIFICATIONS FOR MARKING SHIPMENTS (t)	100-2 DRG. 20-4-436
14	STRAPPING, FLAT, STEEL	(t) QQ-5-781 DRG. 20-4-436
15	STRAWBOARD (FOR PACKING AMMUNITION)	(t) 50-11-69 DRG. 20-4-436
16	WATER RESISTANT ADHESIVE (FOR SEALING FIBER-BASED BOXES)	AXS-1074 DRG. 20-4-436
17	WRAPPING, GREASEPROOF	AXS-840 DRG. 20-4-436

* - THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.
 (t) - THESE SPECIFICATIONS ARE NOT MANDATORY, BUT MAY BE USED BY CONTRACTOR.

LINE NO.	WEIGHTS (ESTIMATED)	POUNDS
1	BOX (EMPTY)	13.0
2	CONTAINERS, COMPLETE, (10)	3.5
3	ROUNDS, COMPLETE, (10)	13.1
4	CARTON, PACKING AND 10 CARTRIDGES	.4
5	FILLERS, STRAPPING AND CONNECTOR	1.2
6	CARTON, PACKING AND 6 CARTRIDGES	.7
7	CARTON, PACKING AND 5 CARTRIDGES	.5
8	CARTONS, INNER AND OUTER	2.0
9	TOTAL	36.4

THIS BOX & CARTONS USED FOR PACKING THE FOLLOWING:
 GRENADES, RIFLE SMOKE, (WP) M141 IN CONTAINER M141.
 GRENADES, RIFLE SMOKE, (M20) IN CONTAINER M142.
 GRENADES, RIFLE SMOKE, (COLORED) IN CONT. M142.
 GRENADES, RIFLE SMOKE, (COLORED) T12, IN CONTAINER M143 (NOTE-N).
 10 CARTRIDGES, RIFLE GRENADES, CALIBER 30, M3
 6 CARTRIDGES, CARBINE, CALIBER 30, M6
 5 CARTRIDGES, GRENADE AUX. M7 (NOTE-N)
 3 - CLIPS LAUNCHER POSITIONING (IN PAPER ENVELOPE)

PACKING AND MARKING OF BOX AND CARTONS FOR GRENADES, RIFLE.

MARCH 10, 1944		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	436	
1 2-12-43		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
DRG. PERTAINS TO		DFTSMAN			
		H.T.L.			
		J.J.G.			
		J.H.			
		SUBMITTED			
		EXAMINED			
		R.C. Walling			
		M.			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
		C.S. Reed by a.a.			
		COL, ORD. DEPT. U.S.A.			
		ORDNANCE DEPT. U.S.A.			

SCALE: 1/2, 1/4, 1/8

LIST OF PARTS											LINE NO.	WEIGHTS(ESTIMATED)		LINE NO.	LIST OF SPECIFICATION		SPEC NUMBER *	REQUIRED BY
LINE NO.	NAME OF PART	NUMBER REQ'D PER COMPONENT	PIECE-MARK	MATERIAL				APPROX. UNIT WEIGHT (POUNDS)	APPROX. GROSS WT OF RAW STOCK PER 100 ASSEMBLIES	REMARKS								
				SIZE OR FORM	KIND	GRADE	SPEC NUMBER											
1	SEAL CAR	2	20-4-440A	LEAD			COMMERCIAL					1	CRATE, M153A1	8.75	2	AMMUNITION,EXCEPT SMALL ARMS AMMUNITION,GENERAL SPEC.FOR	50-0-1	DRG 20-4-440
2												2	MINE, AT, HE, HEAVY, M6A1	21.00	3	ENAMEL, LUSTRELESS, QUICK-DRYING	JAN-E-74	DRG 20-4-440
3					ENAMEL, OLIVE DRAB			3-181			(a)	3	FUZE, M600 (IN CAN)	1.00	4	LACQUER ENAMEL, LUSTRELESS	JAN-L-73	DRG20-4-440
4												4	ACTIVATOR M1 (IN CAN)	.75	5	ENAMEL, OLIVE DRAB, RUST-INHIBITING	3-181	DRG 20-4-440
5					INK, STENCIL, YELLOW			TT-1-558				5	MINE, PRACTICE, M12 (EMPTY)	8.84	6	INK, STENCIL	TT-1-558	DRG 20-4-440
6												6	TOTAL, MINE M6A1	31.50	7	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1	3-181
7												7	TOTAL, MINE, PRAC. M12 (EMPTY)	17.59	8			
8												9			9	STANDARD SPECIFICATIONS FOR MARKING SHIPMENTS	100-2	DRG 20-4-440
9												10			10	GENERAL SPECIFICATION FOR PACKING	JAN-P-100	DRG 20-4-440
* THE SPECIFICATION NUMBERS SHOWN ARE BASIC. NUMBERS ONLY. WHEN A SPECIFICATION NUMBER IS LISTED, IT IS ASSUMED THAT THE SPECIFICATION IS THE LATEST EDITION.																		

(a) ALTERNATIVE: OLIVE DRAB ENAMEL, GRADE I SPEC. JAN-E-74 OR LACQUER ENAMEL, GRADE I, SPEC. JAN-L-73.

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

PACKING INSTRUCTIONS
BASE OF MINE IS TO REST IN RING AT THE BOTTOM OF THE CRATE. THE PRESSURE PLATE OF THE MINE SHOULD EXTEND UP THROUGH HOLE IN THE COVER OF THE CRATE. TWO CANS, ONE CONTAINING THE M600 FUZE AND ONE CONTAINING THE M1 ACTIVATOR, ARE TO BE PLACED IN THE CORNERS OF THE CRATE ADJACENT TO THE SPRING CLIPS. THE CRATE IS THEN TO BE SEALED BY LOOPING A CAR SEAL WIRE OVER THE TOP PORTION OF THE SPRING CLIP DOWN UNDER THE TOP CHANNEL AROUND TO THE BODY OF THE SPRING CLIP AND SEALED WITH EMBOSSING SEALER TO PRODUCE DESIGNS SHOWN.

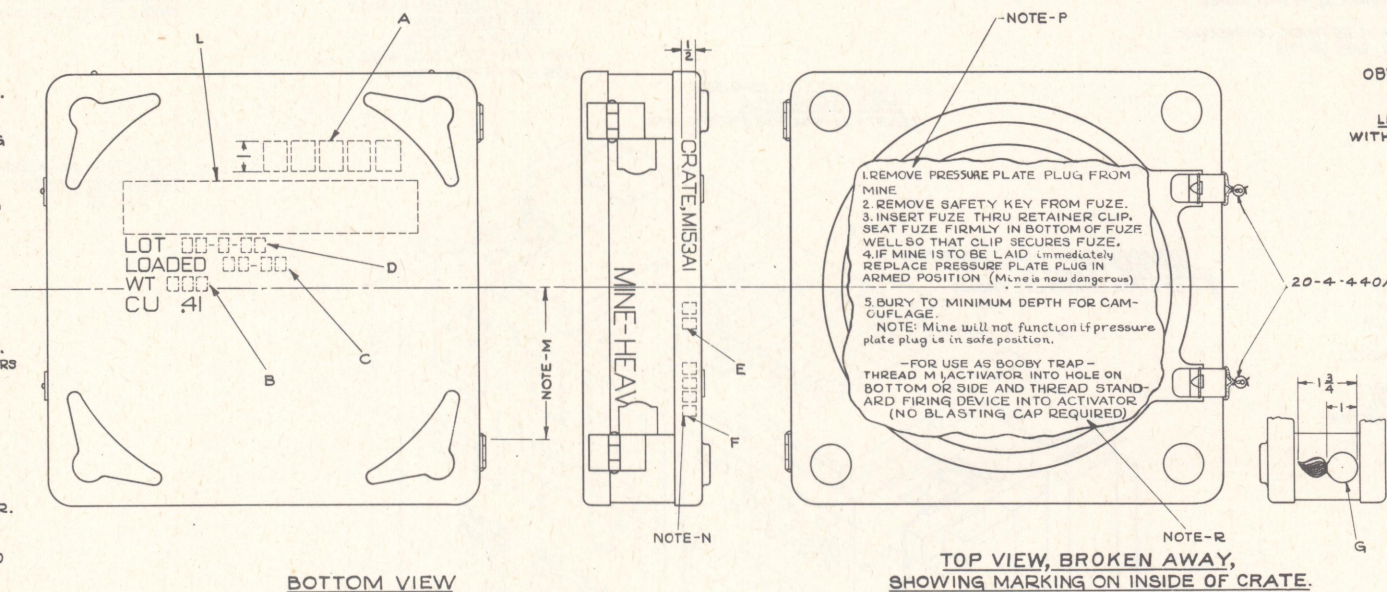
NOTE: FUZE M600 AND ACTIVATOR M1 ARE PACKED WITH M6A1 MINE ONLY.

MARKING INSTRUCTIONS
TOUCH UP WHERE NECESSARY WITH OLIVE DRAB ENAMEL. LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN, LETTERS AND FIGURES WHERE NOT DIMENSIONED, TO BE NOT LESS THAN 1/16 INCH HIGH. ALL MARKING TO BE STENCILED WITH YELLOW STENCIL INK.

A-INSERT AIC CODE.
B-INSERT GROSS WEIGHT.
C-INSERT MONTH AND YEAR LOADED.
D-INSERT LOT NUMBER.
E-INSERT INITIALS OR SYMBOL OF CRATE MANUFACTURER.
F-INSERT DATE OF MANUFACTURE.
G-ORDNANCE INSIGNIA.
L-INSERT "I MINE AT, HE, HEAVY, M6A1 WITH 1 FUZE, M600 AND 1 ACTIVATOR M1" OR "I MINE AT, HEAVY, PRACTICE M12" AS APPLICABLE.

NOTES:
M- THIS AREA TO BE RESERVED FOR ADDITIONAL FIELD SERVICE MARKINGS.
N- MARKING MAY APPEAR ON ANY SIDE.
P- LETTERS AND FIGURES TO BE 1/16 INCH HIGH.
R- MAY BE PRINTED ONLY WITH RUBBER STAMP OR BY SILK SCREEN PROCESS, DECALCOMANIAS NOT PERMITTED.

FOR PACKING CRATE ASSEMBLY SEE DRG 76-17-21



OBVERSE & REVERSE OF CAR SEAL
SEAL CAR 20-4-440A5
LEAD, COMMERCIAL .50 DIA X .15 THICK
WITH NON-SLIP STEEL WIRE .056 DIA X 8.0 LONG

PACKING AND MARKING APPLIES TO THE FOLLOWING:
1 MINE AT, HE, HEAVY M6A1
1 FUZE M600
1 ACTIVATOR, M1
OR
1 MINE, AT, HEAVY, PRACTICE, M12

SUPERSEDES 20-4-440 WITH CHANGE
FEB 21, 1945

PACKING AND MARKING OF CRATE METAL, AMM, MINE, M153A1 FOR MINE, AT, HE, HEAVY, M6A1 & PRAC. M12	
MARCH 20, 1944	CLASS DIVISION DRAWING FILE
REVISIONS	20 4 440
3 11-4-44	
4 2-21-45	
5 8-15-45	
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED: DECIMAL ± FRACTIONAL ± ANGULAR ±	
DRG. PERTAINS TO	DESIGNED BY: <i>ZAH</i> CHECKED BY: <i>ZAH</i> SUBMITTED BY: <i>ZAH</i> EXAMINED BY: <i>R.C. Walling</i> APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: <i>G.S. Reed</i> ORD. DEPT. U.S.A.
D	ORDNANCE DEPT., U. S. A.

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQ'D PER COMPONENT	PIECE-MARK	MATERIAL		GRADE	SPEC. NUMBER	APPROXIMATE UNIT WEIGHT (POUNDS)	REMARKS
				SIZE OR FORM	KIND				
1	CONNECTOR	1	20-4-502D	STRIP	STEEL		COMMERCIAL		(c)
2	FILLER	(a)	20-4-502F	SHEET	STRAWBOARD		50-11-69		(d)
3	SEAL CAR	2	20-4-502E		LEAD		COMMERCIAL		
4	STRAPPING A	1	20-4-502A	STRIP	STEEL	TYPE I, CLASS B	QQ-5-781		(b)
5	STRAPPING B	1	20-4-502B	STRIP	STEEL	TYPE I, CLASS B	QQ-5-781		(b)
6	STRAPPING C	1	20-4-502C	STRIP	STEEL	TYPE I, CLASS B	QQ-5-781		(b)
7					INK, BLACK		36-3		(e)
8					MARKING MATERIAL, BLUE-GRAY		AXS-964		
9					MARKING MATERIAL, YELLOW		AXS-964		
10					STAPLE, CEMENT COATED		COMMERCIAL		

- (a) ALTERNATIVE MATERIAL-ROUND WIRE, NO 14 GAGE, TENSILE-100,000 LBS. PER SQ. IN. SPEC. 100-22.
 (c) NOT REQUIRED WHEN WIRE STRAPPING IS USED.
 (d) ALTERNATIVE MATERIAL-CHIPBOARD, NO. 35, PASTED OR PLAIN, .06 THICK, COMMERCIAL.
 (e) ALTERNATIVE MATERIAL: PAINT, STENCIL, BLACK, TYPE I OR II, SPEC. 3-179.

(a) PACKING INSTRUCTIONS

WITH SEPARATOR ASSEMBLY IN PLACE. PACK 10 GRENADES (IN METAL CONTAINERS) KEY ENDS UP. PLACE METAL CONTAINER PACKING 10 RIFLE GRENADE, CAL. 30, M3 CARTRIDGES, 6 CARBINE GRENADE, CAL. 30, M6 CARTRIDGES, AND 5 GRENADE AUX. M7 CARTRIDGES ON CENTRAL SPACER. PLACE 1 LAUNCHER POSITIONING CLIP ON FILLER AND SECURE WITH ONE STAPLE. PLACE ONE OR MORE FILLERS ON TOP AS REQUIRED TO PACK CONTENTS TIGHTLY. ANY ADDITIONAL FILLER MATERIAL CONSIDERED NECESSARY TO PRODUCE TIGHT PACKING WILL BE ADDED ALONG THE SIDES AND ENDS OF BOX AND ALONG SIDES AND ENDS OF CARTRIDGE METAL CONTAINER. CLOSE COVER, FASTEN HASPS WITH SWIVELS AND SECURE BY PASSING CAR SEAL WIRES THROUGH EYELETS OF HASPS AND SWIVELS, PULL TIGHT AND SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGN SHOWN. PLACE STRAPPING (SEE TABLE FOR APPLICABLE STRAPPING) AROUND CENTER OF BOX AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX THEN SECURE WITH CONNECTOR.

MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. LETTERS AND FIGURES WHERE NOT DIMENSIONED TO BE NOT LESS THAN $\frac{1}{8}$ INCH HIGH.
 ALL MARKING TO BE WITH BLACK INK.
 A-THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
 B-INSERT AIC SYMBOL.
 C-INSERT LOT NUMBER.
 D-MARK BOTH ENDS ALIKE.
 E-INSERT GROSS WEIGHT.
 F-INSERT MONTH AND YEAR LOADED.
 G-ORDNANCE INSIGNIA.
 H-APPLIES TO GRENADE, AT, M9A1 ONLY.

L-INSERT GRENADE DESIGNATION AS APPLICABLE (SEE TABLE).

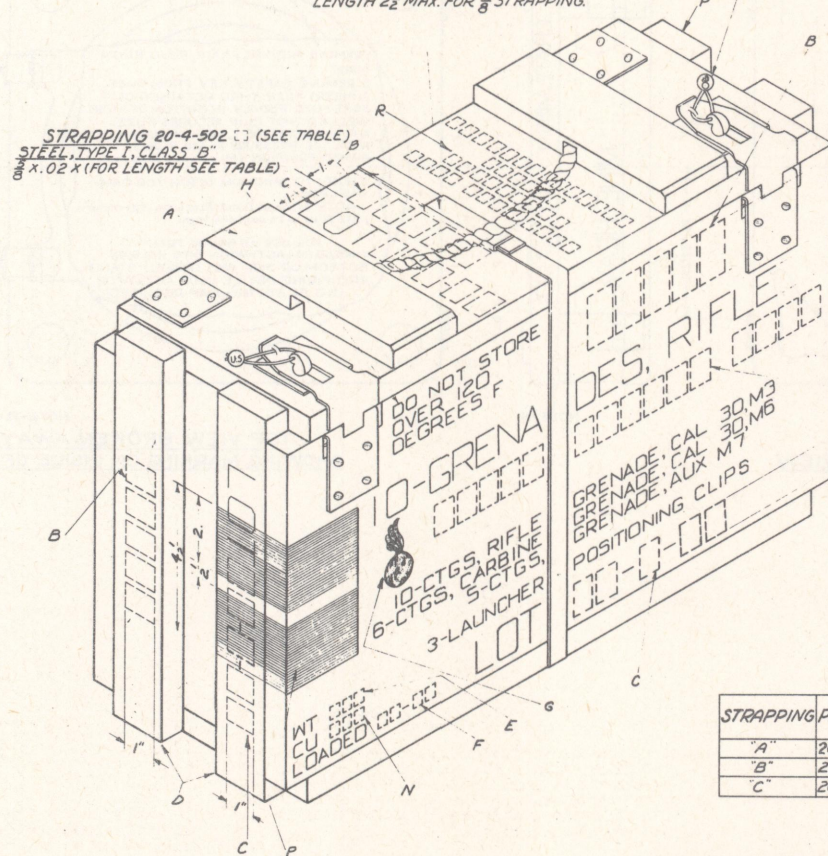
N-INSERT CUBIC FEET AS APPLICABLE (SEE TABLE).

P-WHEN PACKING SMOKE GRENADES MARK OPPOSITE CORNERS AS SHOWN, WITH BLUE GRAY MARKING MATERIAL BACKGROUND $\frac{1}{4}$ INCHES HIGH AND ONE YELLOW STRIPE $\frac{1}{8}$ INCH WIDE. LOCATE MARKING AS SHOWN WITH CLEAR SPACE 1 INCH WIDE AT CENTER FOR STRAPPING.

BOX MANUFACTURER'S NAME, ADDRESS AND DATE OF MANUFACTURE TO BE MARKED ON BOTTOM OF BOX IN LETTERS AND FIGURES NOT MORE THAN $\frac{1}{8}$ INCH HIGH.

R-WHEN RIFLE GRENADES, SMOKE (EXCEPT WP) ARE PACKED IN CONTAINER, ICC DESIGNATION TO BE FIREWORKS-HANDLE CAREFULLY-KEEP FIRE AWAY. FOR AT RIFLE GRENADE M9A1 & WP SMOKE, ICC DESIGNATION WILL BE RIFLE GRENADE.

CONNECTOR 20-4-502D
STEEL, COMMERCIAL
LENGTH $2\frac{1}{2}$ MAX. FOR $\frac{3}{8}$ STRAPPING.



- NOTES:-
 (a) WHEN RIFLE GRENADE AT, M9A1 IS PACKED OMIT LAUNCHER POSITIONING CLIPS.
 (f) WHEN M23 RIFLE GRENADES ARE PACKED THE ASSORTMENT OF CARTRIDGES SHALL BE
 10-M3's.
 6-M6's.
 10-M7's.

STRAPPING	PIECE-MARK	LENGTH	GRENADE
A	20-4-502A2	42	M23A1
B	20-4-502B	43	M20 AND M22
C	20-4-502C	44	M19A1 & M9A1

FOR PACKING AND MARKING OF CONTAINER FOR CARTRIDGES SEE DRG C7673508
 FOR PACKING AND MARKING OF METAL CONTAINER SEE DRG 76-1-802.
 FOR PACKING BOX SEE DRG 76-1-803.

OBVERSE AND REVERSE OF CAR SEAL.

SEAL CAR 20-4-502E
LEAD, COMMERCIAL
.5 DIA X .15 THICK
(WITH NON-SLIP STEEL WIRE, .056 DIA X 6 MIN. LONG).

FILLER 20-4-502F
STRAWBOARD $\frac{1}{8}$ THICK
 $3\frac{1}{4} \times 13\frac{1}{8}$

WEIGHTS (ESTIMATED)	
PART	POUNDS
1 BOX (EMPTY)	12.80
2 CONTAINERS, COMPLETE, (10)	7.50
3 ROUNDS, COMPLETE (10)	15.00
4 CONTAINER, PACKING 21 CARTRIDGES	.80
5 FILLERS, STRAPPING AND CONNECTOR	.06
6 LAUNCHER POSITIONING CLIP (1)	.04
7	
8 TOTAL (K)	36.20

(K) WEIGHT SHOWN IS FOR PACKING GRENADE, M19.
FOR OTHER GROSS WEIGHTS SEE TABLE.

LIST OF SPECIFICATIONS		NUMBER
1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC. FOR	50-11-69
2		
3	GEN. SPEC FOR PACKAGING AND PACKING FOR OVERSEAS SHIPMENTS	100-14
4	INK, FOR WOODEN BOXES	36-3
5		
6	MARKING MATERIAL (FOR STAINED WOODEN CRATES AND BOXES)	AXS-964
7	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151
8	PACKAGING & PACKING FOR OVERSEAS SHIPMENT, BOXES, WOOD, NAILLED	100-22
9	PAINT, STENCIL	3-179
10		
11	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	100-2
12	STRAPPING, FLAT, STEEL	QQ-5-781
13	STRAWBOARD	50-11-69
14		

*THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATION'S REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

M NUMBER	GRENADE DESIGNATION	SMOKE DESIGNATION	CUBIC FEET	GROSS WEIGHT (POUNDS)
M23A1	SMOKE, COLORED, STREAMER, M23A1	COLORED (a)	1.00	
M22	SMOKE, COLORED, M22 (h)	COLORED (h)	1.10	
M9A1	AT M9A1	WP	1.13	33.50
M19A1	SMOKE, WP M19A1	WP	1.13	36.20
M20	SMOKE, HC, M20	HC	1.10	

- (a) INSERT RED, YELLOW, VIOLET OR GREEN AS APPLICABLE.
 (h) INSERT RED, YELLOW, VIOLET, GREEN OR ORANGE AS APPLICABLE.

PACKING AND MARKING OF BOX FOR 10 OF THE FOLLOWING GRENADES IN METAL CONTAINERS:-
 GRENADE, RIFLE, SMOKE COLORED, M22.
 GRENADE, RIFLE, SMOKE COLORED, STREAMER, M23A1.
 GRENADE, RIFLE, SMOKE, WP M19A1.
 GRENADE, RIFLE, SMOKE, HC, M20.
 GRENADE, RIFLE, AT, M9A1 (a).
 ALSO ONE METAL CONTAINER PACKING THE FOLLOWING:-
 10- CARTRIDGES, RIFLE GRENADE, CAL. 30, M3
 6- CARTRIDGES, CARBINE GRENADE, CAL. 30, M6
 5- CARTRIDGES, GRENADE AUX. M7
 ALSO THREE LAUNCHER POSITIONING CLIPS

PACKING AND MARKING OF BOX FOR RIFLE GRENADES

NOV. 9, 1944		CLASS	DIVISION	CHARGING	FILE
REVISIONS		20	4	502	
1	8-5-45				
2	5-5-49				
SYMBOL					
DRG. PERTAINS TO					
SUBMITTED					
EXAMINED					
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE					
ORDNANCE DEPT., U. S. A.					

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQ'D PER COMPONENT	PIECEMARK	MATERIAL			SPEC. NUMBER	APPROXIMATE WEIGHT (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE			
1	CONNECTOR	1	20-4-503A	STRIP	STEEL		COMMERCIAL		(d)
2	FILLER, TOP	(a)	20-4-503D	SHEET	FIBERBOARD	W55 OR W65	JAN-P-106		(f)
3	FILLER, TOP	(a)	20-4-503F	SHEET	FIBERBOARD	W55 OR W65	JAN-P-106		(h)
4									
5									
6									
7									
8	SEAL, CAR	2	20-4-503B		LEAD		COMMERCIAL		
9	STRAPPING	1	20-4-503C	STRIP	STEEL	TYPE I, CLASS B	QQ-5-781		(c)
10									
11									
12					INK, STENCIL, BLACK		TT-I-559		
13					LACQUER ENAMEL, BLUE GRAY	I	JAN-L-73		(e) (f)
14					LACQUER ENAMEL, YELLOW	I	JAN-L-73		(f) (g)

- (c) ALTERNATIVE MATERIAL: ROUND WIRE, NO. 14 GAGE, TENSILE 100,000 LBS. PER SQ. IN., SPEC. JAN-P-106.
 (d) NOT REQUIRED WHEN WIRE STRAPPING IS USED.
 (e) ALTERNATIVE MATERIAL: ENAMEL, BLUE GRAY, GRADE I, SPEC JAN-E-74.
 (f) REQUIRED ONLY WHEN PACKING CARTRIDGE, SMOKE, WP, M30.
 (g) ALTERNATIVE MATERIAL: ENAMEL, YELLOW, GRADE I, SPEC JAN-E-74.
 (h) ALTERNATIVE MATERIAL: SOLID WATER RESISTANT COMPOSITION BOARD, TYPE I, 1/8" THICK, SPEC. AXS-1623.

(a) PACKING INSTRUCTIONS
 INSERT FOUR CARTRIDGES IN FIBER CONTAINERS IN HORIZONTAL POSITION IN TWO LAYERS, SEALING STRIP END OF THE TWO CONTAINERS TO BE DIAGONALLY OPPOSITE EACH OTHER.

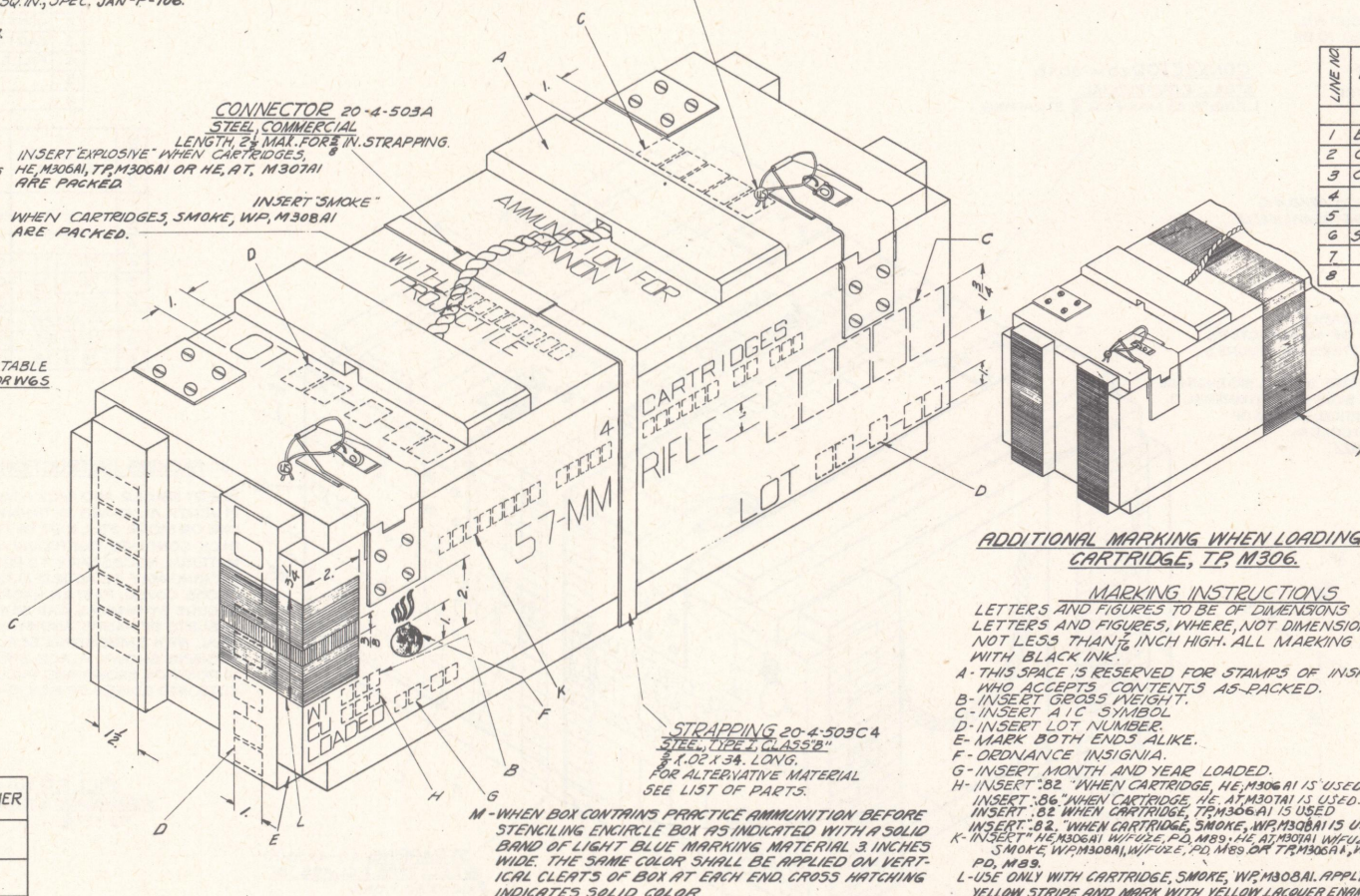
PLACE ONE OR MORE
 FILLERS ON TOP AS REQUIRED TO PACK TIGHTLY. CLOSE COVER, FASTEN HASPS WITH SWIVELS AND SECURE BY PASSING CAR SEAL WIRES THROUGH EYELETS OF HASPS AND SWIVELS. PULL TIGHT AND SEAL WITH EMBOSSING SEALER TO PRODUCE DESIGNS SHOWN. PLACE STRAPPING AROUND BOX IN POSITION SHOWN, AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTOR.

FILLER, TOP
 20-4-503D SEE TABLE
 FIBERBOARD, W55 OR W65

INSERT "EXPLOSIVE" WHEN CARTRIDGES, HE, M306A1, TP, M306A1 OR HE, AT, M307A1 ARE PACKED.

CONNECTOR 20-4-503A
 STEEL, COMMERCIAL
 LENGTH 24" MAX. FOR IN. STRAPPING.

INSERT "SMOKE" WHEN CARTRIDGES, SMOKE, WP, M308A1 ARE PACKED.



M - WHEN BOX CONTAINS PRACTICE AMMUNITION BEFORE STENCILING ENCIRCLE BOX AS INDICATED WITH A SOLID BAND OF LIGHT BLUE MARKING MATERIAL 3 INCHES WIDE. THE SAME COLOR SHALL BE APPLIED ON VERTICAL CLEFTS OF BOX AT EACH END. CROSS MATCHING INDICATES SOLID COLOR.

FOR PACKING BOX, SEE DRG. 76-1-809.
 FOR FIBER CONTAINER, SEE DRG. PIF-18 (k).
 (k) FOR APPLICABLE FIBER CONTAINER, SEE TABLE.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC. FOR	50-0-1	DRG. 20-4-503
2	BOXES, FIBERBOARD (V-BOARD AND W-BOARD)	JAN-P-106	DRG. 20-4-503
3	ENAMEL, LUSTRELESS, QUICK-DRYING	JAN-E-74	DRG. 20-4-503
4	INK, STENCIL; OPAQUE, FOR MARKING POROUS SURFACES	TT-I-559	DRG. 20-4-503
5	LACQUER ENAMEL, LUSTRELESS	JAN-L-73	DRG. 20-4-503
6	METALS; GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151	QQ-S-781
7	BOARD, COMPOSITION, WATER RESISTANT, SOLID	AXS-1623	DRG. 20-4-503
8			
9	PACKAGING AND PACKING FOR OVERSEAS SHIPMENT; GENERAL SPEC. FOR	JAN-P-100	DRG. 20-4-503
10	PAINTS AND RELATED MATERIALS; GENERAL SPECIFICATION FOR	3-1	TT-I-559
11	SHIPMENTS, MARKING; STANDARD SPECS. FOR	100-E	DRG. 20-4-503
12	STRAPPING, FLAT, STEEL	QQ-S-781	DRG. 20-4-503
13			
14			

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LINE NO.	WEIGHTS (ESTIMATED)	PART	CARTR. SMOKE M308A1	CARTR. HE, M306A1	CARTR. HE, AT, M307A1	CARTR. TP, M306A1
			POUNDS	POUNDS	POUNDS	POUNDS
1	BOX (EMPTY)		10.12	10.12	10.46	10.12
2	CARTRIDGES (4)		21.20	21.20	21.20	21.20
3	CONTAINERS, FIBER (4 EMPTY)		3.88	3.88	4.12	3.88
4						
5						
6	STRAPPING, CONNECTORS & FILLERS		1.50	1.50	1.50	1.50
7						
8	TOTAL		36.70	36.70	37.28	36.70

PACKING AND MARKING OF PACKING BOX FOR THE FOLLOWING CARTRIDGES FOR 57-MM RIFLE CARTRIDGE, HE, M307A1, W/FUZE, PD, M89 CARTRIDGE, HE, AT, M306A1, W/FUZE, PD, M89 CARTRIDGE, TP, M306A1, W/FUZE, PD, M89 CARTRIDGE, SMOKE, WP, M308A1, W/F, PD, M89.

NOV. 8, 1944			
CLASS	DIVISION	DRAWING	FILE
20	4	503	
SYMBOL			
DFTSMAN R.W.S. TRACER R.W.S. ENGINEER R.W.S. CHECKER J.H.F. CHIEF OF SPECIALS M.T. SUBMITTED: <i>[Signature]</i> EXAMINED: <i>[Signature]</i> APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: <i>[Signature]</i> COL. ORD. DEPT., U.S.A.			
ORDNANCE DEPT., U.S.A.			

LINE NO.	NAME OF PART	NUMBER REQUIRED PER COMPONENT	PIECE-MARK	MATERIAL				APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF RAW STOCK PER 1000 ASSEMBLIES	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER			
1	CONNECTOR	1	20-4-50TB	STRIP	STEEL		COMMERCIAL			(d)
2	FILLER	(1)	20-4-50TE	SHEET	STRAWBOARD		50-11-69			(b)
3										
4	SEAL, CAR	2	20-4-50TA		LEAD		COMMERCIAL			
5	SPACER	1	20-4-50TC	SHEET	CHIPBOARD		COMMERCIAL			
6	STRAPPING	1	20-4-50TD	STRIP	STEEL	TYPE I, CLASS B	QQ-5-781			(e)
7										
8										
9					INK, BLACK		TT-I-559			
10										
11										

(b) ALTERNATIVE:- NO. 35 CHIPBOARD PASTED OR PLAIN, .06 THICK, COMMERCIAL.

(d) NOT REQUIRED WHEN WIRE STRAPPING IS USED

(e) ALTERNATIVE:- ROUND WIRE, NO. 14 GAGE, TENSILE = 100,000 LBS. PER SQ. IN, SPEC. JAN-P-100.

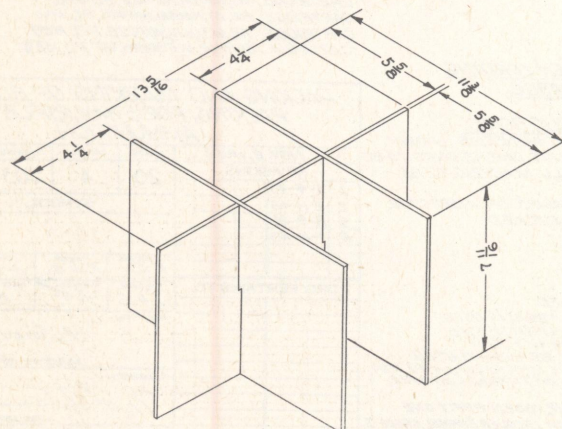
MARKING INSTRUCTIONS

LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN.
LETTERS AND FIGURES WHERE NOT DIMENSIONED TO BE NOT LESS THAN $\frac{1}{16}$ INCH HIGH.
ALL MARKING TO BE WITH BLACK STENCIL INK.

- A - THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS THE CONTENTS AS PACKED.
B - INSERT GROSS WEIGHT.
C - INSERT LOT NUMBER.
D - MARK BOTH ENDS ALIKE.
E - ORDNANCE INSIGNIA.
F - INSERT MONTH AND YEAR LOADED.
G - INSERT "HE I, M97, W/F, PD, M75, TP, M99, DRILL, M18A2, ELECTRIC, TP, M99, AP-T, M95, OR INCENDIARY, M96" AS APPLICABLE.

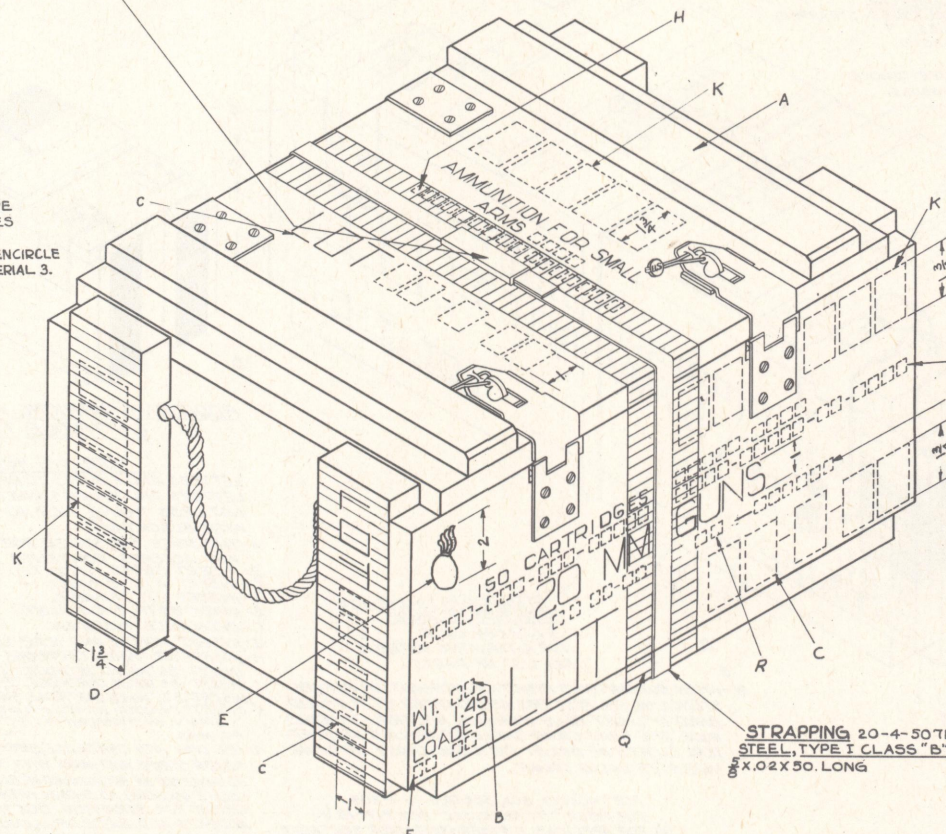
- H - INSERT "WITH EXPLOSIVE BULLETS" AS APPLICABLE.
K - INSERT AIC SYMBOL.

- N - INSERT BURSTING CHARGE "TETRYL" WHEN APPLICABLE.
P - BOX MANUFACTURE'S NAME, ADDRESS AND DATE OF MANUFACTURE SHALL BE MARKED ON BOTTOM OF BOX WITH LETTERS AND FIGURES NOT GREATER THAN $\frac{1}{16}$ INCH HIGH.
Q - WHEN BOX CONTAINS PRACTICE AMMUNITION BEFORE STENCILING ENCIRCLE BOX AS INDICATED WITH A SOLID BAND OF LIGHT BLUE MARKING MATERIAL 3 INCHES WIDE. THE SAME COLOR SHALL BE PAINTED ON VERTICAL CLEATS OF BOX AT EACH END. CROSS HATCHING INDICATES SOLID COLOR.
R - INSERT "M1, AN-M2, M3 OR M24" AS APPLICABLE.

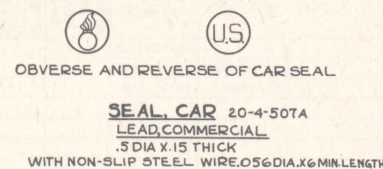


SPACER 20-4-50TC
SOLID CHIPBOARD COMMERCIAL
 $\frac{1}{8}$ THICK

CONNECTOR 20-4-50TB
STEEL, COMMERCIAL
LENGTH $2\frac{1}{2}$ MAX. FOR $\frac{3}{8}$ STRAPPING



FILLER 20-4-50TE
STRAWBOARD $\frac{1}{8}$ THICK
 $13\frac{1}{4} \times 14\frac{1}{16}$



OBVERSE AND REVERSE OF CAR SEAL

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM. GENERAL SPEC. FOR	50-0-1	DRG. 20-4-50T
2			
3	INK, STENCIL, OPAQUE, FOR MARKING POROUS SURFACES (WOODEN BOXES, ETC.)	TT-I-559	DRG. 20-4-50T
4	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151	QQ-5-781
5	PACKAGING AND PACKING FOR OVERSEAS SHIPMENT	JAN-P-100	DRG. 20-4-50T
6	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR	3-1	TT-I-559
7			
8			
9	SHIPMENTS, MARKING, STANDARD SPECIFICATIONS FOR	100-2	DRG. 20-4-50T
10	STRAPPING, FLAT, STEEL	QQ-5-781	DRG. 20-4-50T
11	STRAWBOARD (FOR PACKING AMMUNITION)	50-11-69	DRG. 20-4-50T

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON SHALL NOT APPLY.

LINE NO.	ITEM	ELECTRIC, TP, M99, M97, M99, M18A2, M95	M96
1	PACKING BOX (EMPTY)	14.5	14.5
2	CONTAINERS, METAL (6)	4.5	4.5
3	CARTRIDGES, COMPLETE (150)	85.5	82.5
4	FILLERS, SPACER, STRAPPING, ETC.	1.	1.
5			
6	TOTAL	105.5	102.5

LINE NO.	CARTRIDGE DRG. NO.	PROJECTILE DESIGNATION	FUZE DESIGNATION	ROUND UNIT WEIGHT	APPROX. TOTAL WT. PACKED BOX (LBS.)	20MM GUN DESIGNATION
1						
2						
3						
4	75-1-177	CARTRIDGE, AP-T, M95		.57		M1, AN-M2 & M3
5	75-1-178	CART. INCENDIARY, M96		.55		M1, AN-M2 & M3
6	75-1-179	CART. HE I, M97	PD M75	.57		M1, AN-M2 & M3
7	P-74728	CART. ELECTRIC, TP M99		.57		M24
8	72-3-85	CARTRIDGE, DRILL, M18A2		.57		M1, AN-M2 & M3
9	75-1-181	CARTRIDGE, TP, M99		.57		M1, AN-M2 & M3

(A) PACKING INSTRUCTIONS

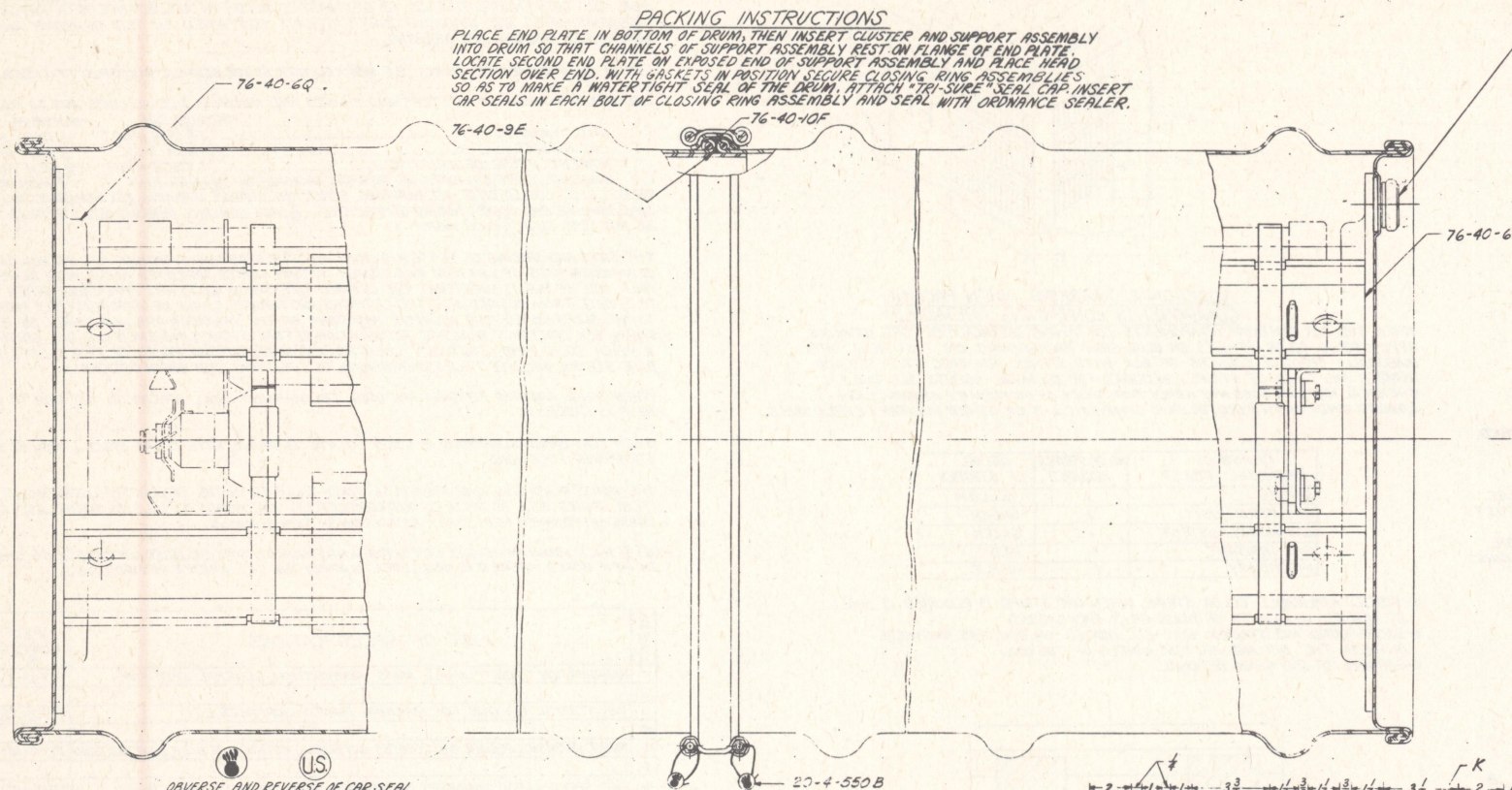
INSERT SPACER AND PACK 6 METAL CONTAINERS IN VERTICAL ROWS WITH HANDLES UP PUT ONE OR MORE FILLERS ON TOP AS REQUIRED TO PACK CONTENTS TIGHTLY. ANY ADDITIONAL FILLER MATERIAL NECESSARY TO PRODUCE TIGHT PACKING MAY BE ADDED ALONG SIDES AND ENDS. CLOSE COVER, FASTEN HASPS WITH SWIVELS AND SECURE BY PASSING CAR SEAL WIRES THROUGH EYELETS OF HASPS AND SWIVELS, PULL TIGHT AND SEAL WITH EMBOSSEING SEALER TO PRODUCE DESIGNS SHOWN. PLACE STRAPPING AROUND BOX IN POSITION SHOWN AND PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SECURE WITH CONNECTOR.

THIS BOX FOR USE IN PACKING 150 ROUNDS (IN 6 METAL CONTAINERS), OF 20MM AMM. LISTED ABOVE IN TABLE.

PACKING AND MARKING OF BOX, FOR AMMUNITION FOR 20-MM GUNS M1, AN-M2, M3 AND M24

NOVEMBER 10, 1944		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	507	
1	8-15-43				
2	12-20-47				
3	3-9-48				
4	3-22-48				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED		DIGITAL 1 FRACTIONAL ANGULAR 2			
DRG. PERTAINS TO		ORIGINAL J.V.E. A.F.H. P.H.C. CHECKED SAG G.B.B. PRINCIPAL ENGINEER M.T. SUBMITTED: <i>Alison Jr.</i> EXAMINED: <i>M.F. Adams</i> APPROVED BY OTHER OF THE CHIEF OF ORDNANCE: <i>L.C. Hunt</i> MAJ. GEN. DPT. U.S.A.			
D		ORDNANCE DEPT. U.S.A.			

FOR PACKING BOX SEE DRG. T6-1-816
FOR METAL CONTAINER SEE DRG. T6-1-814



PACKING INSTRUCTIONS
PLACE END PLATE IN BOTTOM OF DRUM, THEN INSERT CLUSTER AND SUPPORT ASSEMBLY INTO DRUM SO THAT CHANNELS OF SUPPORT ASSEMBLY REST ON FLANGE OF END PLATE. LOCATE SECOND END PLATE ON EXPOSED END OF SUPPORT ASSEMBLY AND PLACE HEAD SECTION OVER END, WITH GASKETS IN POSITION SECURE CLOSING RING ASSEMBLIES SO AS TO MAKE A WATERTIGHT SEAL OF THE DRUM. ATTACH "TRI-SURE" SEAL CAP, INSERT CAR SEALS IN EACH BOLT OF CLOSING RING ASSEMBLY AND SEAL WITH ORDNANCE SEALER.

CAP, TRI-SURE, SEAL 20-4-550A
STEEL, COMMERCIAL
FOR 3/4 INCH SEAL OF AMERICAN FLANGE AND MANUFACTURING CO., INC., OR EQUAL.



EXPLOSIVE BOMBS

SEAL, CAR 20-4-550B
LEAD, COMMERCIAL
5 DIA. X .15 THICK WITH NON-SLIP STEEL WIRE, .036 DIA. X 6 MIN. LENGTH.

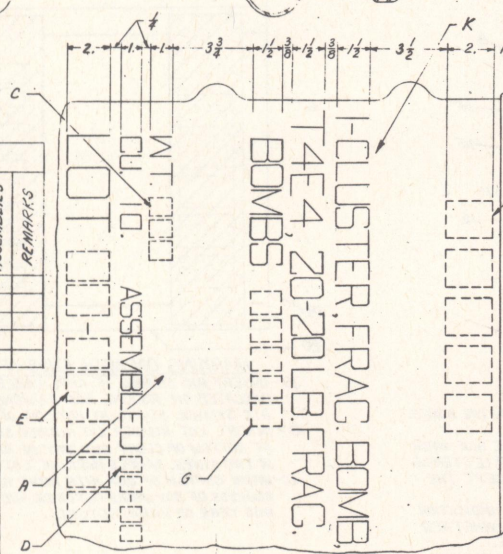
LIST OF PARTS

LINE NO.	NAME OF PART	NUMBER REQUIRED PER COMPONENT	PIECE-MARK	SIZE OR FORM	MATERIAL	KIND	GRADE	SPEC. NUMBER	APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WEIGHT OF RAW STOCK PER 1000 ASSEMBLIES	REMARKS
1	CAP, TRI-SURE, SEAL	1	20-4-550A		STEEL			COMMERCIAL			
2	SEAL, CAR	4	20-4-550B		LEAD			COMMERCIAL			
3					PAINT, STENCIL YELLOW		TYPE I OR II	3-179			

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG 20-4-550
2	PAINT, STENCIL	3-179	DRG 20-4-550
3	PAINTS AND RELATED MATERIALS, GENERAL SPEC. FOR ETC.	3-1	3-179
4	SHIPMENT, STANDARD SPECS. FOR MARKING BY CONTRACTORS	100-2	DRG 20-4-550

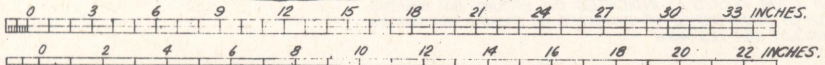
* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

LINE NO.	WEIGHTS (ESTIMATED)	POUNDS
	PART	
1	DRUM ASSEMBLY (EMPTY)	78.75
2	END PLATES	30.5
3	STRAPPING, CONNECTORS	2.0
4	SUPPORT UNITS (CHANNELS, HOLDING PLATE ASSEMBLIES)	114.0
5	CLUSTER	404.0
6	TOTAL	629.25



MARKING INSTRUCTIONS
LETTERS AND FIGURES TO BE OF DIMENSIONS SHOWN. ALL MARKING TO BE WITH YELLOW STENCIL PAINT.

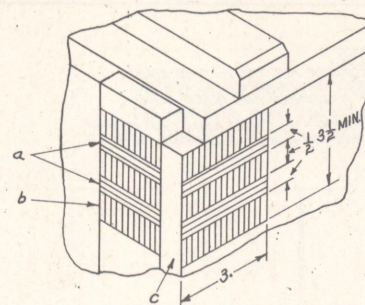
- A- THIS SPACE IS RESERVED FOR STAMPS OF INSPECTOR WHO ACCEPTS CONTENTS AS PACKED.
- B- INSERT A.I.C. SYMBOL.
- C- INSERT GROSS WEIGHT.
- D- INSERT MONTH AND YEAR CLUSTER IS ASSEMBLED.
- E- INSERT LOT NUMBER.
- F- ORDNANCE INSIGNIA.
- G- INSERT "M-44", "M-42", OR "M-48" AS APPLICABLE.
- H- MARK TOP AND BOTTOM ALIKE.
- K- MARK FOOT ASSEMBLY SIMILAR TO HEAD ASSEMBLY EXCEPT THAT MARKING WILL BE STARTED FROM OPEN END IN ACCORDANCE WITH DIMENSION SHOWN FOR HEAD ASSEMBLY. WHEN ASSEMBLING HEAD ASSEMBLY, MARKING MUST BE 180° FROM FOOT ASSEMBLY.



PACKING AND MARKING OF DRUM, PACKING FOR USE IN PACKING ONE OF THE FOLLOWING BOMB CLUSTERS WITH SUPPORT ASSEMBLY:-
1-CLUSTER, FRAG. BOMB, T4E4 (500LB. SIZE) OF 20-BOMB, FRAG., 20 LB. AN-M41, OR 20-BOMB, FRAG., 20 LB. M-42, OR 20-BOMB, FRAG., 20 LB. M-48.
FOR SUPPORT ASSEMBLY SEE DRG. 76-40-5. FOR DRUM ASSEMBLY SEE DRG. 76-40-7.

PACKING AND MARKING OF DRUM, STEEL, FOR FRAG. BOMB CLUSTER, T4E4, (500 LB. SIZE).

MARCH 13, 1945		CLASS	DIVISION	DRAWING	FILE
REVISIONS		20	4	550	
SYMBOL					
OFFICER	TRACER	ENGINEER			
E. J. B.	E. J. B.	W. J.			
CHECKER	CHECKER	CHEF OFFICER			
R. J. B.	F. J. B.	M. T.			
SUBMITTED BY					
E. J. B.					
EXAMINED BY					
A. J. B.					
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE					
M. J. B.					
ORD. DEPT., U. S. A.					
D					

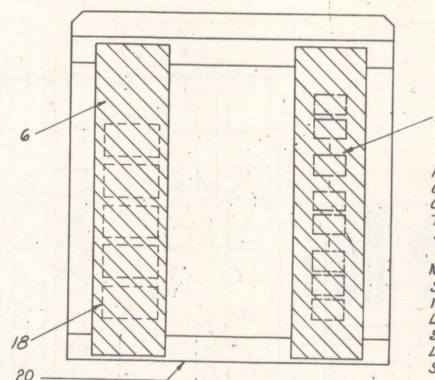


ADDITIONAL MARKING WHEN PACKING COMPONENTS CONTAINING CHEMICALS

WHEN THE BOX CONTAINS COMPONENTS CONTAINING CHEMICALS, BEFORE MARKING APPLY SOLID COLOR STRIPES ON BLUE-GRAY BACKGROUND ON TWO RIGHT HAND DIAGONALLY OPPOSITE CORNERS OF BOX WITH STENCIL INK, SPEC T.T.-I-559, FOR NUMBER AND COLOR OF STRIPES REQUIRED FOR CHEMICAL AGENTS, SEE TABLE. CHEMICAL MARKING DOES NOT APPLY FOR SMOKE OR INCENDIARY AMMUNITION. LOADED ONLY WITH PYROTECHNIC COMPOSITIONS OR OTHER MILITARY EXPLOSIVES.

CLASS OF CHEMICAL FILLER	NO. OF STRIPES REQUIRED	COLOR OF STRIPES
SMOKE	1	YELLOW
GAS-PERSISTENT	2	GREEN
GAS-NON-PERSISTENT	1	GREEN
GAS-IRRITANT	1	RED
INCENDIARY	1	PURPLE

a-INSERT APPLICABLE COLOR STRIPE. WHEN ONE STRIPE IS REQUIRED IT SHALL BE APPLIED IN CENTER OF BLUE-GRAY BACKGROUND.
b-BACKGROUND AND STRIPES MAY BE LOCATED ON CORNERS ANYWHERE BETWEEN THE TOP AND BOTTOM PANELS OF THE BOX.
c-MARKING OF END GRAIN OPTIONAL.



MARKING ON BOTH ENDS OF BOX

19 - INSERT AIC SYMBOL, IF APPLICABLE, AS INDICATED ON PACKING BOX DRAWING.
AIC SYMBOL STARTS AT BOTTOM OF CLEAT.

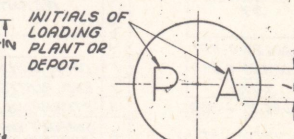
19 - INSERT LOT NUMBER. LOT NUMBER STARTS AT BOTTOM OF CLEAT AND MAY BE APPLIED IN TWO LINES. SAMPLE MARKING: "LOT KOP-123-456"

20 - MARK BOTTOM OF BOX WITH NAME AND ADDRESS OF BOX MANUFACTURER AND MONTH AND YEAR OF MANUFACTURE.

MARKING DIAGRAM AND SEALING FOR
WOODEN PACKING BOXES.

METHOD OF SEALING TOGGLES:-
 SECURE EACH TOGGLE BY INSERTING CAR SEAL WIRE THROUGH LOOP
 IN PIVOTED LEVER, ANCHOR ABOVE THE LINK BEFORE SNAPPING PIVOTED
 LEVER IN CLOSED POSITION, CLOSE PIVOTED LEVER AND PASS FREE END OF
 SEALING WIRE OVER OUTSIDE OF PIVOTED LEVER AND AROUND AND BEHIND
 LINK, AND FASTEN IN THE LEAD CAR SEAL ON OUTSIDE OF PIVOTED LEVER.
 SEAL WITH EMBOSSED SEALER TO PRODUCE DESIGNS SHOWN.

STRAPPING OF BOX:-
PLACE STRAPPING AROUND BOX AS SHOWN ON PACKING BOX DRAWING, AND
PULL TIGHT UNTIL STRAPPING CUTS INTO EDGES OF BOX, THEN SEAL
WITH CONNECTOR. WHEN USING ALTERNATIVE STRAPPING, SEAL IN
ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

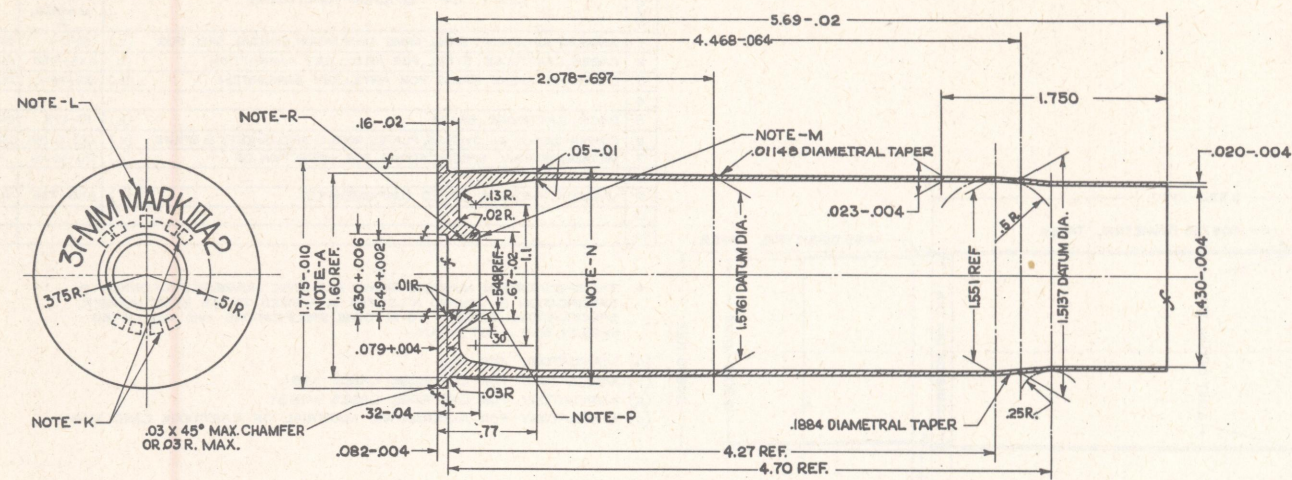


REVERSE SIDE LEAD CAR SEAL

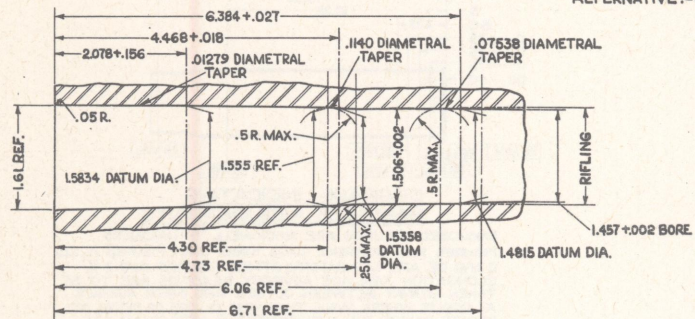
LINE NO.	LIST OF SPECIFICATIONS	SPEC NUMBER	REQUIRED BY
1	AMMUNITION EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC FOR	50-0-1	20-4-61
2			
3	INK, STENCIL, OPAQUE, FOR MARKING POROUS SURFACES, ETC	TT-I-559	20-4-61
4			
5	PAINT, VARNISH, LACQUER AND RELATED MATERIALS; METHODS OF INSPECTION AND HAND	TT-P-141	TT-I-555
6			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

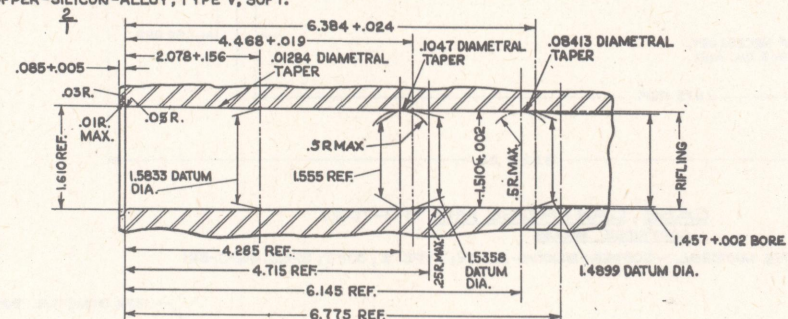
[illegible]



CASE CARTRIDGE MARK III A2 71-2-48A27
 CARTRIDGE BRASS
 ALTERNATIVE:-COPPER-SILICON-ALLOY; TYPE V, SOFT.



GUN CHAMBER
 1.457 INCH SUB-CAL



GUN CHAMBER
 37-MM.AUTOMATIC AN-M10

R-TAPER .006 INCH ON THE DIAMETER PER INCH OF LENGTH.

- NOTES:-
- A-ALLOWABLE ECCENTRICITY BETWEEN PRIMER HOLE AND OUTSIDE CYLINDRICAL SURFACE OF CASE ON THE 1.60 DIA., .01 (I.E. A TOTAL DIFFERENCE OF INDICATOR READING OF .02 INCH.)
 - B-COMPUTED CAPACITY OF CASE TO OVERFLOWING, WITH PRIMER IN PLACE, 9.3 CU. IN. APPROXIMATELY.
 - C-WEIGHT OF CASE, .39 LB.
 - D-THE CHAMBER PRESSURE USED IN THE BALLISTIC ACCEPTANCE TEST WILL BE APPROX. 30,200 LBS. PSI.
 - E-MANDATORY DIMENSIONS, NAMELY: DIAMETRAL TAPER, DATUM DIAMETER AND THE TOLERANCED DIM. FOR LOCATION OF DATUM DIA. ESTABLISH LIMITING CONIC FRUSTUMS WITHIN WHICH CARTRIDGE CASE OR CHAMBER MAY VARY.
 - F-REF. DIMENSIONS ARE NOT MANDATORY. THEY LOCATE BASICALLY, ONLY, THE INTERSECTIONS OF CONIC FRUSTUMS AND CYLINDERS.
 - G-ALL DIAMETRAL TAPERS ARE IN INCHES PER INCH.
 - H-REMOVE ALL BURRS.
 - K-STAMP WITH LETTERS AND FIGURES $\frac{3}{16}$ HIGH AND .01 DEEP LOT NUMBER (INCLUDING INITIALS OR SYMBOL OF MANUFACTURER) AND YEAR OF MANUFACTURE. SIZE AND POSITION OF LETTERS AND FIGURES NOT MANDATORY.
 - L-STAMP WITH LETTERS AND FIGURES $\frac{3}{16}$ HIGH AND .01 DEEP, CALIBER AND DESIGNATION OF CARTRIDGE CASE, SIZE AND POSITION OF LETTERS AND FIGURES NOT MANDATORY. RAISED METAL DUE TO STAMPING ALLOWED, .002 MAX.
 - M-BURRS CAUSED BY REAMING NEED NOT BE REMOVED.
 - N-MACHINE CYLINDRICAL, IF NECESSARY, BETWEEN LIMITS OF 1.59 DIA. AND 1.60 DIA.
 - P-METAL AROUND PRIMER SEAT TO BE HARDENED BY MANDRELLING, BALL BROACHING OR THE COLD WORKING INCIDENT TO HEADING OPERATION TO OBTAIN SPECIFIED HARDNESS.

LINE NO.	LIST OF SPECIFICATIONS	SPECIFICATION NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC. FOR	50-0-1	DRG. 71-2-48
2			
3	CARTRIDGE BRASS DISKS, FOR ARTILLERY AMMUNITION	57-173	DRG. 71-2-48
4	CARTRIDGE CASES, BRASS, FOR ARTILLERY AMMUNITION	50-46-1	DRG. 71-2-48
5			
6			
7	COPPER-SILICON-ALLOY; BARS, PLATES, RODS, SHAPES, SHEETS & STRIPS	QQ-C-591	DRG. 71-2-48
8			
9			
10	METALS, GENERAL SPECIFICATIONS FOR THE INSPECTION OF	QQ-M-151	57-173
11			
12			
13			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

THIS CARTRIDGE CASE USED IN THE FOLLOWING GUNS:-
 1.457 INCH SUB-CAL GUN
 37-MM. AUTOMATIC GUN AN-M10

SUPERSEDES 71-2-48 WITH CHANGE
 AUGUST 15, 1945.

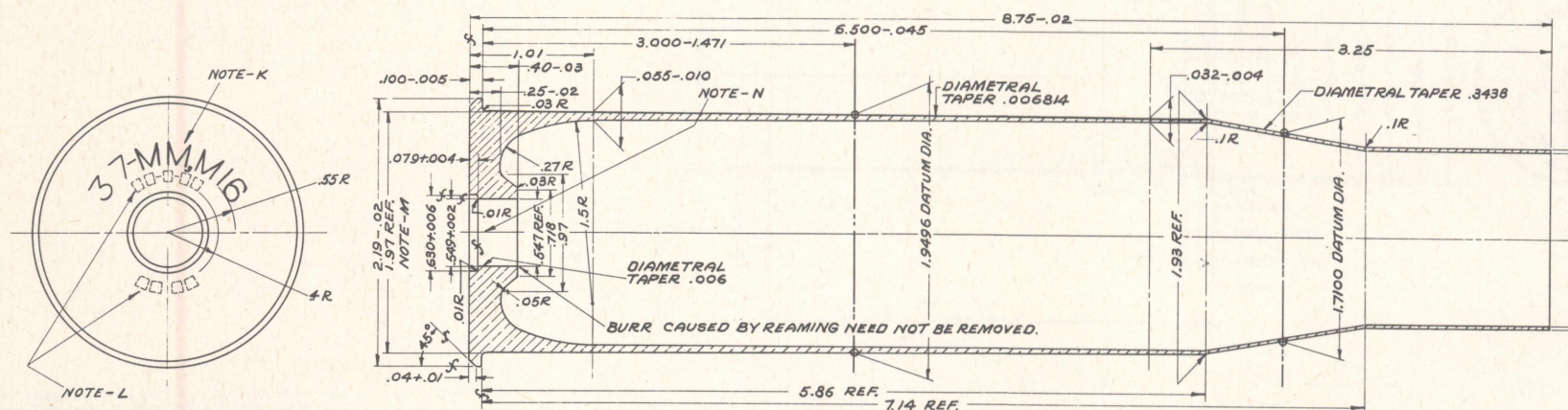
CASE, CARTRIDGE, 37-MM. MARK III A2

DECEMBER 6, 1904	CLASS	DIVISION	DRAWING	FILE
REVISIONS	71	2	48	
27 8-15-45				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED				
DECIMAL: ±				
FRACTIONAL: ±				
ANGULAR: ±				
DRG. PERTAINS TO	DESIGNER	TRACER	ORD. ENGINEER	
	S.A.K.	S.A.K.	S.A.K.	
CHECKER	244	244	244	
SUBMITTED	Aug 15 1945			
EXAMINED	C. S. Reed			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:				
C. S. Reed				
COL. ORDN. DEPT. U.S.A.				
D	ORDNANCE DEPT., U. S. A.			

NOTICE: THIS DRAWING SHALL NOT BE USED FOR REPRODUCTION WHOLLY OR IN PART, OR COPY WHEN AUTHORIZED BY THE SECTION, WITH UNLESS THE GOVERNMENT PROPRIETARY.

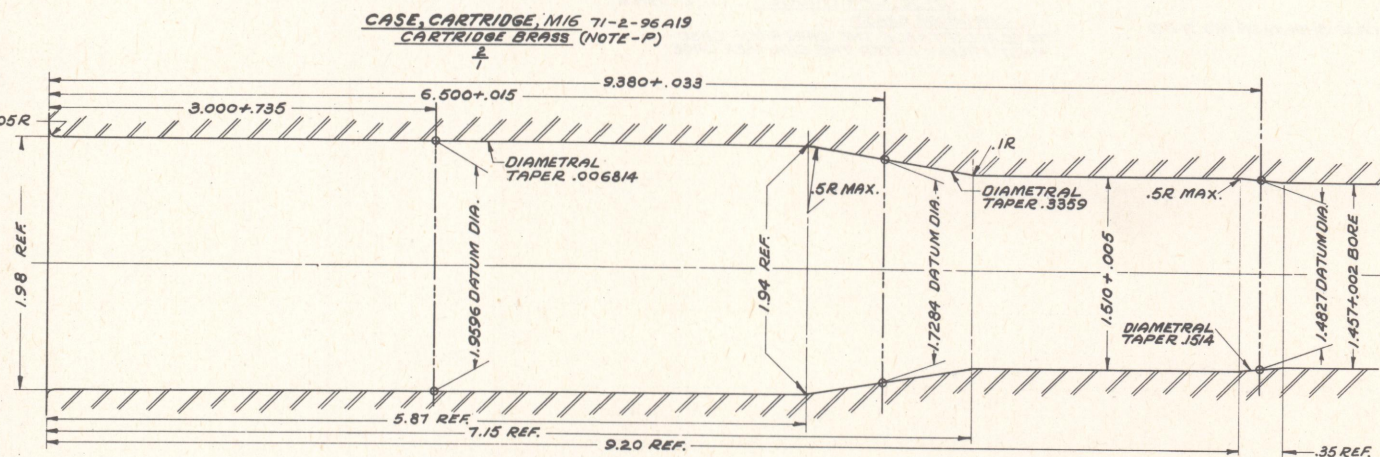
LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GEN. SPEC. FOR	50-0-1	DRG. 71-2-96
2			
3	CARTRIDGE BRASS DISKS FOR ARTILLERY AMM.	57-173	DRG. 71-2-96
4	CARTRIDGE CASES, BRASS, FOR ARTILLERY AMM.	50-46-1	DRG. 71-2-96
5			
6	COPPER-SILICON-ALLOY, BARS, PLATES, RODS, SHAPES, ETC.	QQ-C-591	DRG. 71-2-96
7			
8	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151	57-173
9			
10			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.



THIS CASE USED IN GUNS, M3 AND M6.

- NOTES:
- A-ALLOWABLE ECCENTRICITY BETWEEN THE PRIMER HOLE AND OUTSIDE CYLINDRICAL SURFACE OF CASE ON THE 1.970 DIA., 01 (i.e. A TOTAL DIFFERENCE OF INDICATOR READING OF .02 INCH.
- B-COMPUTED CAPACITY OF CASE TO OVERFLOWING WITH PRIMER IN PLACE, 20.9 CU. IN. APPROX.
- C-WEIGHT OF CASE, .93 LB. APPROX.
- D-THE CHAMBER PRESSURE USED IN THE BALLISTIC ACCEPTANCE TEST WILL BE APPROX. 56,000 LBS. PER SQ. INCH.
- E-MANDATORY DIMENSIONS (NAMELY, DIAMETRAL TAPER, DATUM DIAMETER AND THE TOLERANCED DIMENSION FOR LOCATION OF DATUM DIAMETER) ESTABLISH LIMITING CONIC FRUSTRUMS WITHIN WHICH CARTRIDGE CASE OR CHAMBER MAY VARY.
- F-"REF." DIMENSIONS ARE NOT MANDATORY. THEY LOCATE, BASICALLY ONLY, THE INTERSECTIONS OF CONIC FRUSTRUMS AND CYLINDERS.
- G-ALL DIAMETRAL TAPERS ARE IN INCHES PER INCH.
- H-A SLIGHT UPSETTING OF THE METAL ON THE SMALL NECK DIAMETER IN THE REGION OF THE NECK TAPER OF THE CASE IS PERMISSABLE, BUT, TO BE ACCEPTABLE, THE "GO" GAGE FOR THE MOUTH DIAMETER MUST ENTER THE MOUTH OF THE CASE TO A DEPTH OF .75 INCH, BUT THE SIDES OF THE MOUTH OF THE CASE MUST BE PARALLEL WITHIN THE DIAMETRAL TOLERANCES TO THIS DEPTH.
- K-STAMP WITH LETTERS & FIGURES APPROX. .2 HIGH & .01 DEEP. CALIBER AND DESIGNATION OF CARTRIDGE CASE. SIZE & POSITION OF LETTERS & FIGURES NOT MANDATORY.
- L-STAMP WITH LETTERS & FIGURES APPROX. .1 HIGH & .01 DEEP. LOT NUMBER, INCLUDING INITIALS OR



- SYMBOL OF MANUFACTURER AND YEAR OF MANUFACTURE.
- SIZE & POSITION OF LETTERS & FIGURES NOT MANDATORY. RAISED METAL DUE TO STAMPING, ALLOWED, .002 MAX.
- M-MACHINE CYLINDRICAL, IF NECESSARY BETWEEN LIMITS OF 1.97 DIA. AND 1.96 DIA.
- N-METAL AROUND PRIMER SEAT TO BE SO HARDENED BY MANDRELLING, BALL BROACHING OR INCIDENT TO THE HEADING OPERATION AS TO OBTAIN THE SPECIFIED HARDNESS.
- P-ALTERNATIVE: COPPER-SILICON-ALLOY TYPE II, 50FT, SPEC. QQ-C-591.

FOR STEEL CARTRIDGE CASE, SEE 71-2-147.

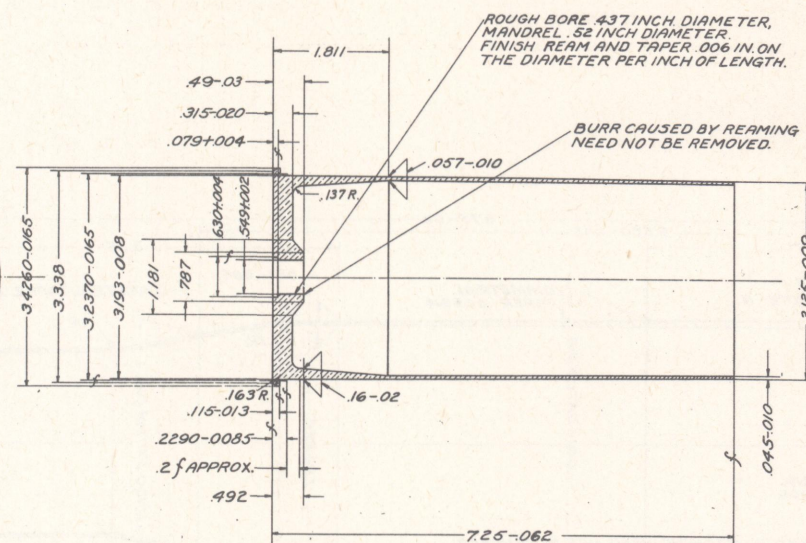
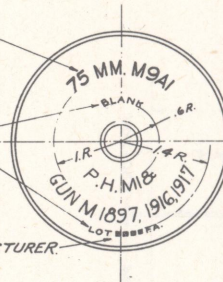
WITH 71-2-147 SUPERSEDES 71-2-96
WITH CHANGE, AUGUST 15, 1945.

CASE, CARTRIDGE, 37MM, M16			
DECEMBER 8, 1924	CLASS	DIVISION	DRAWING FILE
REVISIONS	71	2	96
19 8-15-45			
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
DECIMAL ±			
FRACTIONAL ±			
ANGULAR ±			
DRG. PERTAINS TO			
CHECKER	TRACER	ORD. ENGINEER	
WRT	WRT	WRT	
SUBMITTED			
EXAMINED			
C. S. Reed			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
ORD. DEPT. U. S. A.			
D			
ORDNANCE DEPT. U. S. A.			

STAMP WITH LETTERS AND FIGURES 3/16 HIGH AND 0.1 DEEP.

STAMP WITH LETTERS AND FIGURES 3/32 HIGH AND 0.1 DEEP.

LOT NUMBER AND INITIALS OF MANUFACTURER.



CASE CARTRIDGE 71-2-99A 6
CARTRIDGE BRASS
TO BE ACCEPTABLE THE CARTRIDGE CASE
MUST FREELY ENTER THE CHAMBER GAGE.

REMOVE ALL BURRS

SCALE, INCHES 1/4

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, GENERAL SPECIFICATIONS FOR	50-0-1	71-2-99
2			
3	CARTRIDGE BRASS DISKS	57-173	71-2-99
4	CARTRIDGE CASES, BRASS, FOR ARTILLERY AMMUNITION	50-46-1	71-2-99
5	COPPER, INGOTS	QQ-C-521	57-173
6			
7	METAL, GENERAL SPECIFICATIONS FOR THE INSPECTION OF	QQ-M-151	57-173
8			
9	ZINC, SLAB (SPELTER)	QQ-Z-351	57-173

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER.

THIS CARTRIDGE CASE TO BE USED IN
75 MM. FIELD GUNS M1897, 1916, 1917 AND
75 MM. PACK HOW. MI.

SUPERSEDES OLD TRACING 71-2-99
UNDER REVISION DATE OF MARCH 31, 1932.

CASE, BLANK CARTRIDGE, 75 MM.
M9AI.

CLASS		DIVISION		DRAWING		FILE	
71		2		99			
REVISIONS		SYMBOL					
1	6-24-29						
2	7-2-30						
3	9-31-32						
4	4-11-33						
5	9-7-34						
6	4-20-39						
SUBMITTED		DFTSMAN TRACER LDC DFTSMAN					
		EJMC EJMC					
		CHECKER CHECKER CHIEF DFTSMAN					
DRG. PERTAINS TO		CAPT. ORD. DEPT. U.S.A.					
		EXAMINED					
		LT. COL. ORD. DEPT. U.S.A.					
		APPROVED					
		MAJOR ORD. DEPT. U.S.A.					
D		ORDNANCE OFFICE, WAR DEPT.					

Technical drawing of a circular part. The drawing shows a circle with a center point. A dimension line indicates a radius of 112R. A dimension line indicates a diameter of 105MM. A dimension line indicates a radius of .75 R. A dimension line indicates a thread of M14.

[illegible]

ALTERNATIVE MATERIAL:-COPPER-SILICON-ALLOY;CLASS A,STRIP,ANNEALED

-
- Technical drawing of a rifle barrel showing dimensions and features. The drawing includes the following specifications:
- Overall length: 15.200 ± 0.036
 - Distance from front face to datum: 6.700 ± 0.555
 - Front face chamfer: $.03 R$
 - Barrel diameter: 4.2956 DATUM DIA
 - Distance from datum to rifling start: 4.235 ± 0.04
 - Rifling start chamfer: $.5 R$
 - Rifling diameter: 4.1820 DATUM DIA
 - Rifling length: 4.134 ± 0.02 BORE
 - Rifling end chamfer: $.2525$ DIAMETRAL TAPER
 - Distance from front face to datum: 13.43 REF
 - Distance from front face to rifling start: 14.99 REF
 - Distance from front face to rifling end: 15.39 REF
 - Barrel diameter: 4.356 REF

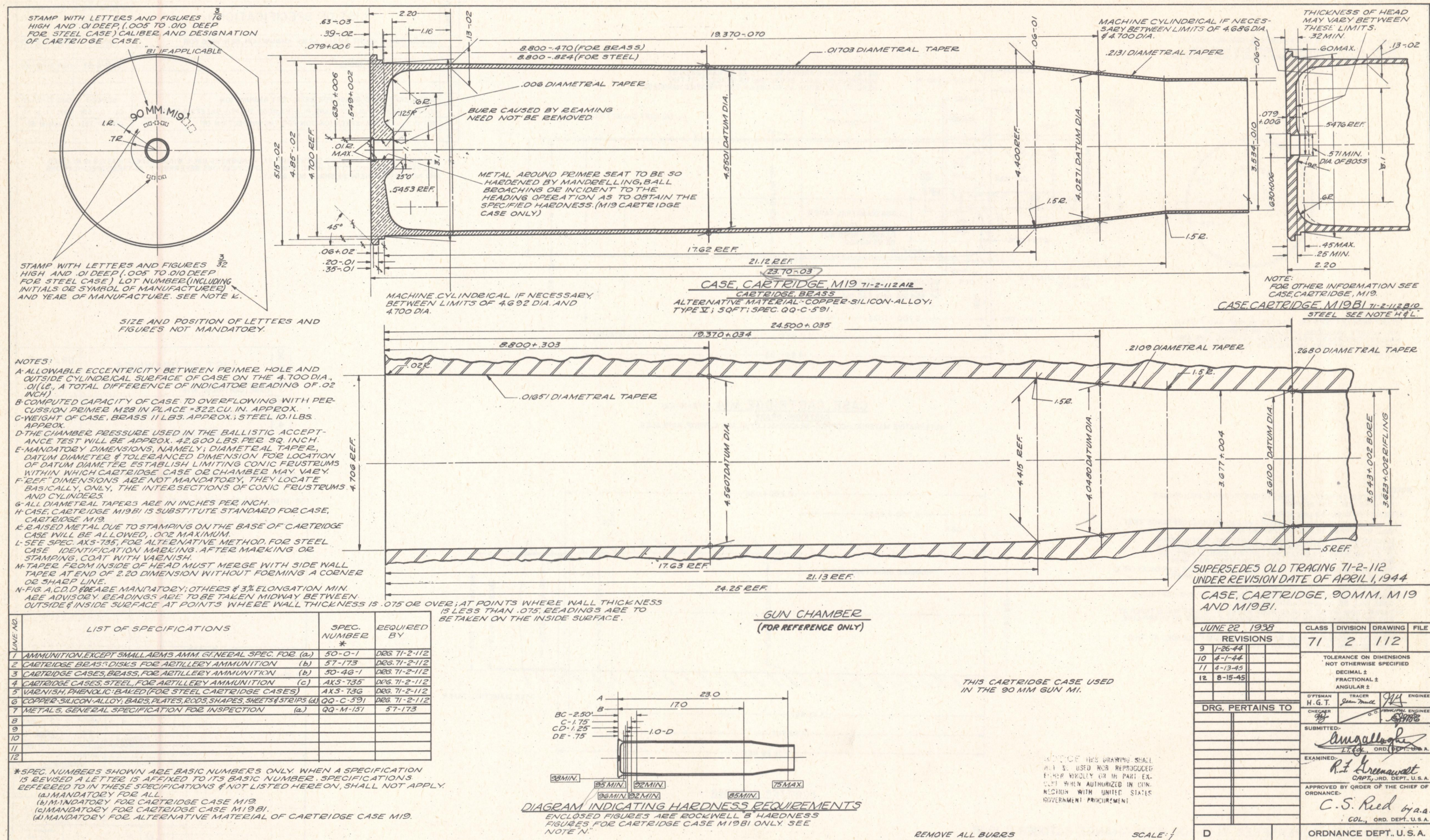
WITH 71-2-151 SUPERSEDES 71-2-101 WITH CHANGE OCTOBER 11, 1948

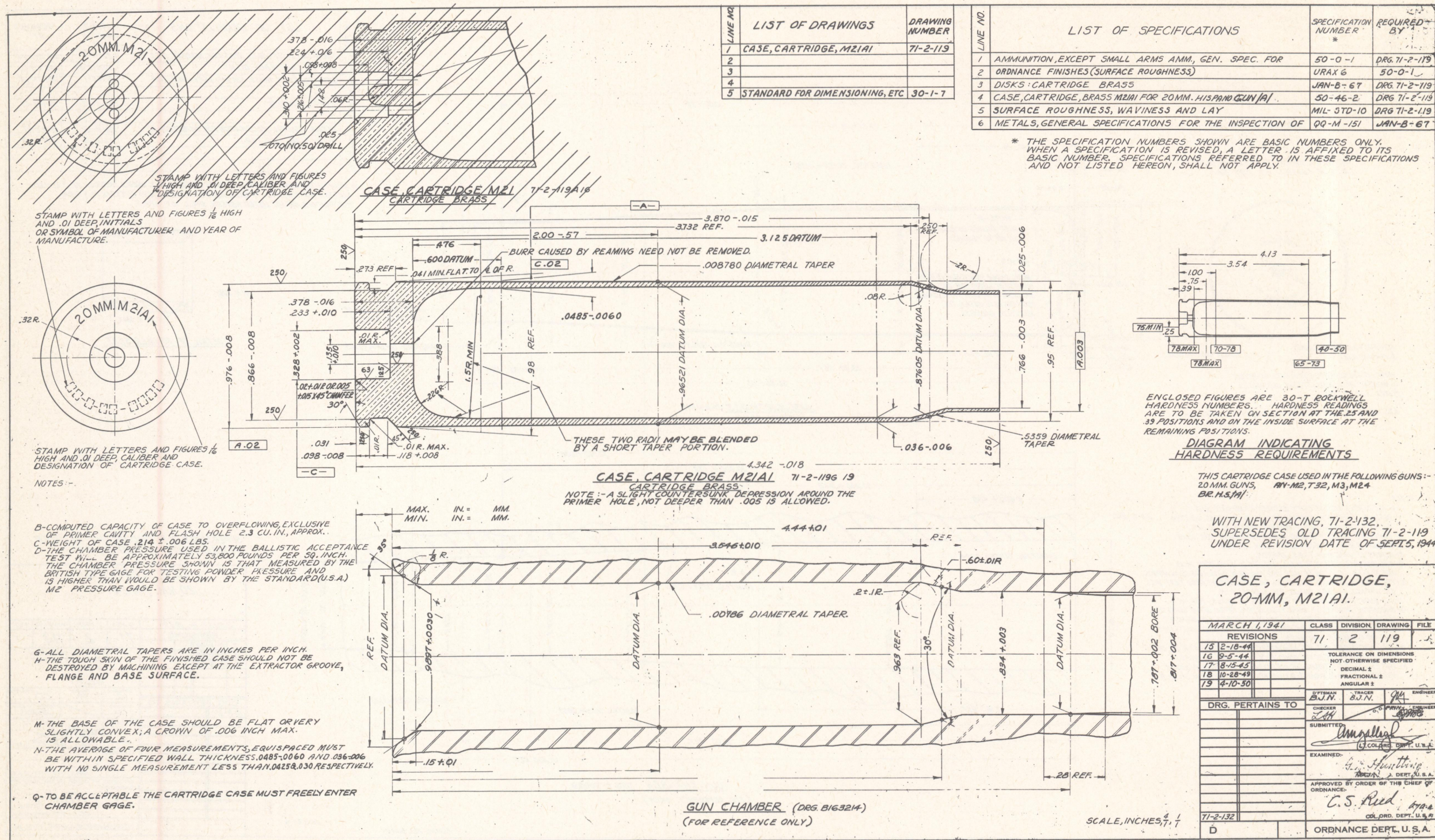
* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

THIS CARTRIDGE CASE USED IN THE 105MM.HOWITZER,M2AI AND M4

FOR MI4BI CASE, SEE DWG 71-2-151

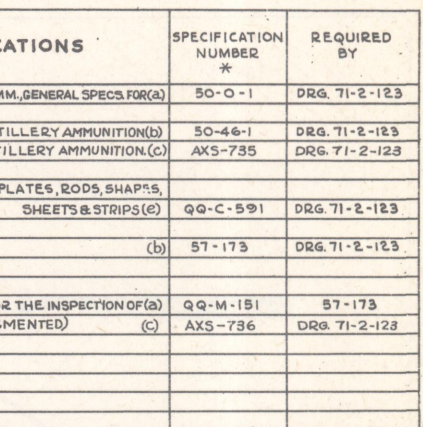
HEAT TREATMENT & PROTECTIVE FINISH		CLASS		DIVISION		DRAWING	
		71		2		101	
PHYSICAL PROPERTIES		DRAWING PERTAINS TO					
ORIGINAL DATE OF DRAWING DEC 7, 1927							
REVISIONS							
21 10-11-48							
		WEIGHT		DO NOT		APPLY PART NO.	
				DO		(See Specifications)	
		SCALE 3/4		DOCS		48 3/4	
		TOLERANCES OR DIMENSIONS (Unless otherwise specified)		7/8		PDR	
				1/2		OR	
		MATERIAL SPECIFIED		SUBMITTED		M. J. J. J.	
		FRACTIONAL		ORDERED		M. J. J. J.	
		FRACTIONAL		EXAMINED		C. R. Dutton	
		FRACTIONAL		APPROVED		J. J. J. J.	
		FRACTIONAL		CON.		CON.	
		D				ORDNANCE DEPT 6 5 ADPT	





GUN CHAMBER (DRG. B163214)
(FOR REFERENCE ONLY)

SCALE, INCHES $\frac{1}{4}$, 1



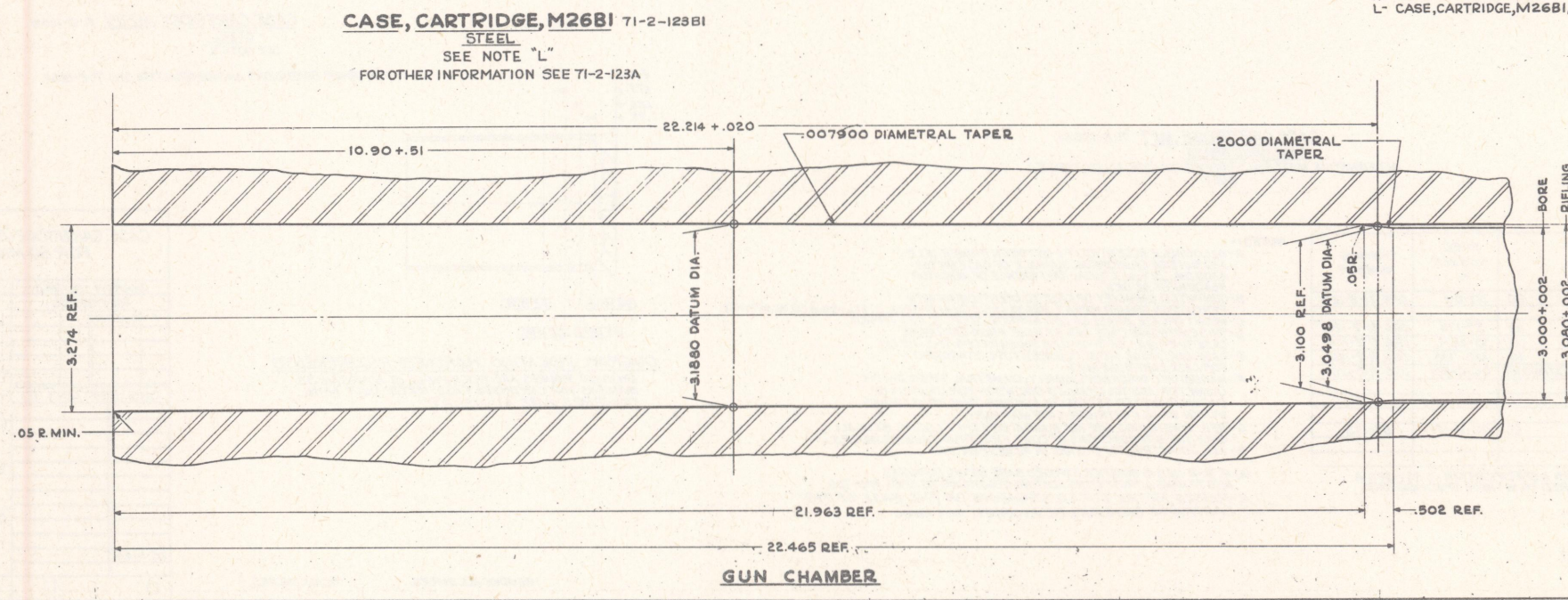
* SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON SHALL NOT APPLY.




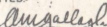

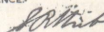
(a) MANDATORY FOR ALL	(c) MANDATORY FOR ALT
(b) MANDATORY FOR CASE, CARTRIDGE, M26.	MATERIAL FOR CASE,
(c) MANDATORY FOR CASE, CARTRIDGE, M26B1.	CARTRIDGE, M26.

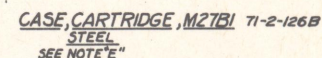
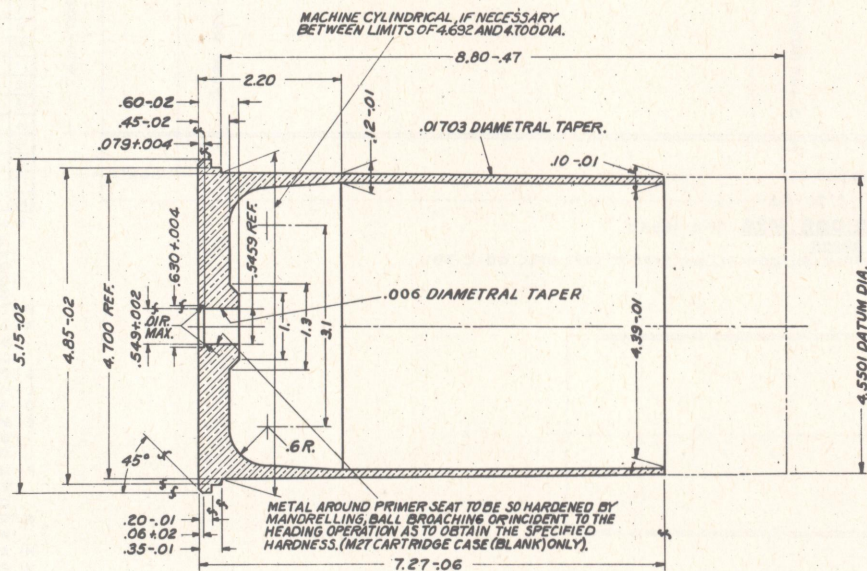
NOTES:-

- A- ALLOWABLE ECCENTRICITY BETWEEN PRIMER HOLE AND OUTSIDE CYLINDRICAL SURFACE OF CASE ON THE 3.265 DIAMETER, .01 (IE., A TOTAL DIFFERENCE OF INDICATOR READING OF .02 INCH).
- B- COMPUTED CAPACITY OF CASE TO OVERFLOWING WITH PRIMER IN PLACE 149 CU. IN. APPROX.
- C- CHAMBER PRESSURE BALLISTIC ACCEPTANCE TEST APPROX. 44,160 LBS./SQ. IN.
- D- WEIGHT OF BRASS CASE 5.28 LBS.
- E- METAL AROUND PRIMER SEAT OF BRASS CASE TO BE HARDENED BY MANDRELLING, BALL BROACHING OR THE COLD WORKING INCIDENT TO HEADING OPERATION, TO OBTAIN THE SPECIFIED HARDNESS.
- F- MANDATORY DIMENSIONS; NAMELY, DIAMETRAL TAPER, DATUM DIAMETER AND TOLERANCED DIMENSION FOR LOCATION OF DATUM DIAMETER ESTABLISH LIMITING CONIC FRUSTRUMS WITHIN WHICH CARTRIDGE CASE OR CHAMBER MAY VARY.
- G- "REFERENCE" DIMENSIONS ARE NOT MANDATORY, THEY LOCATE BASICALLY ONLY THE INTERSECTIONS OF CONIC FRUSTRUMS AND CYLINDERS.
- H- ALL DIAMETRAL TAPERS ARE IN INCHES PER INCH.
- K- REMOVE ALL BURRS.
- L- CASE, CARTRIDGE, M26B1, IS SUBSTITUTE STANDARD FOR CASE, CARTRIDGE, M26.

THIS CARTRIDGE CASE IS FOR USE IN THE 76MM GUN, MI.



CASE, CARTRIDGE, 76MM, M 26, AND M26 BI.										
AUGUST 17, 1942.					CLASS		DIVISION		DRAWING FILE	
REVISIONS					71		2		123	
1	6-26-43				TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED DECIMAL 2 FRACTIONAL 2 ANGULAR 2					
2	8-15-45									
DRG. PERTAINS TO					DFTMAN		TRACER		ENGINEER	
					H.P.Z.		H.T.L.		 ENGINEER	
					CHECKER		D.S.		 D.S. CHECKER	
					 H.P.Z.					
SUBMITTED:					 MAJ. ORD. CAPT. U.S.A.					
					EXAMINED:					
					 MAJ. ORD. DEPT. U.S.A.					
					APPROVED BY ORDER OF THE CHIEF OF ORDNANCE.					
					 COL. ORD. DEPT. U.S.A.					
					ORDNANCE DEPT., U.S.A.					
5 4LE: T										



FOR OTHER DIMENSIONS AND INFORMATION SEE 71-2-126A

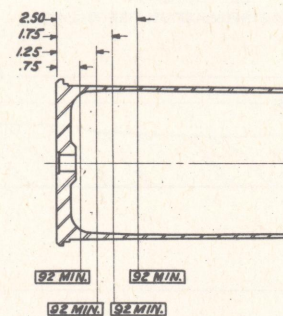


DIAGRAM INDICATING HARDNESS REQUIREMENTS

ENCLOSED FIGURES ARE ROCKWELL "B" HARDNESS NUMBERS FOR CARTRIDGE CASE M2TB1 ONLY MIN. FIGURES ARE ADVISORY.

*THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBER ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

(a) MANDATORY FOR ALL.
(b) MANDATORY FOR CARTRIDGE CASE, M27.
(c) MANDATORY FOR CARTRIDGE CASE, M281.
(d) MANDATORY FOR ALTERNATIVE MATERIAL OF CARTRIDGE CASE M 27.

CASE, CARTRIDGE, M27 71-2-126A1
CARTRIDGE BRASS
ALTERNATIVE MATERIAL:- COPPER-SILICON-ALLOY; TYPE X,
SOFT.

NOTES:-

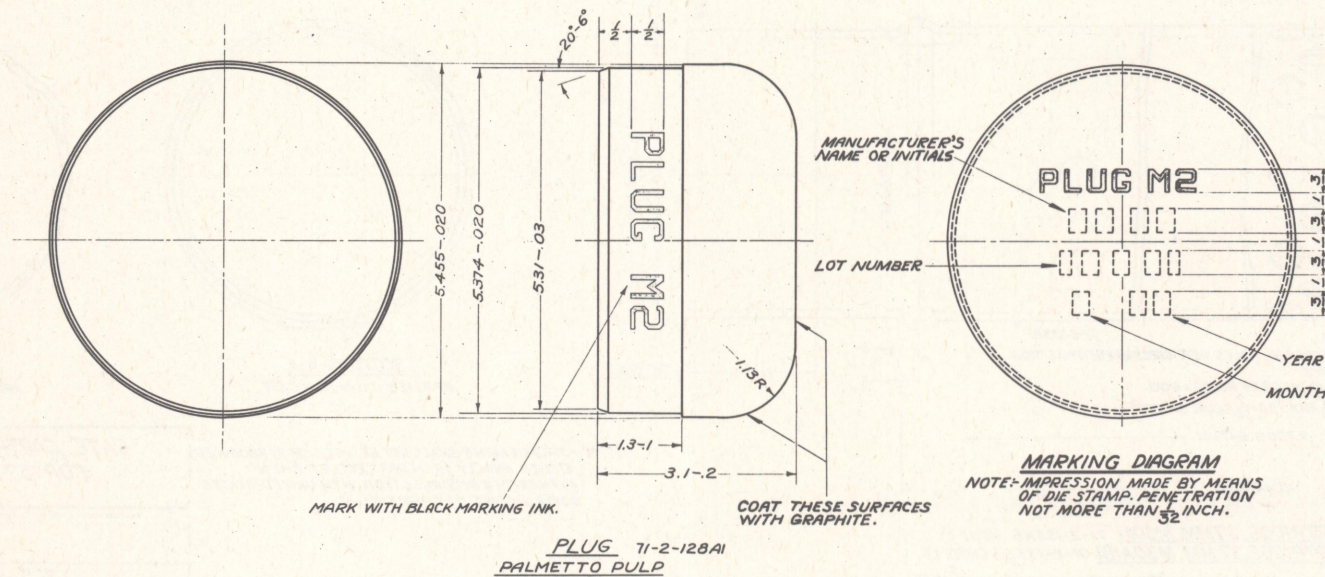
- A - ALLOWABLE ECCENTRICITY BETWEEN PRIMER HOLE AND OUTSIDE CYLINDRICAL SURFACE OF CASE ON THE 4.700 DIA. ϕ (I.E., A TOTAL DIFFERENCE OF INDICATOR READING OF .02 INCH.)
- B - COMPUTED CAPACITY OF CASE TO OVERFLOW WITH PERCUSSION PRIMER M262, BRN33 = 95.5 CU IN. APPROX.; STEEL = 98.8 CU IN. APPROX.
- C - CASE OF CONCERN TO BE APPROX. 6 LBS. APPROX.
- D - THIS CARTRIDGE CASE CAN BE MADE FROM CARTRIDGE CASE 7I-2-112A OR 7I-2-112B SHOWN ON DRG. 7I-2-112 (2)
- E - CASE, CARTRIDGE M21BI IS SUBSTITUTE STANDARD FOR CASE, CARTRIDGE M2T.
- F - MANDATORY DIMENSIONS, NAMELY, DIAMETRAL TAPER, DATUM DIAMETER AND TOLERANCED DIMENSION FOR LOCATION OF DATUM DIAMETER ESTABLISH LIMITING CONIC FRUSTRUMS WITHIN WHICH CARTRIDGE CASE MAY VARY.
- G - REF. DIMENSIONS ARE NOT MANDATORY; THEY LOCATE BASICALLY, ONLY, THE INTERSECTIONS OF CONIC FRUSTRUMS AND CYLINDERS.
- H - ALL DIAMETRAL TAPERS ARE IN INCHES PER INCH.

(a) IF 71-2-112B IS MODIFIED, EXPOSED BARE METAL SURFACES ARE TO HAVE A PROTECTING COATING ACCORDING TO SPEC. AXS-735. K-RAISED METAL DUE TO STAMPING ON THE BASE OF THE CARTRIDGE CASE WILL BE ALLOWED, .002 MAX.

REMOVE ALL BURRS.

SCALE, INCHES, $\frac{1}{1}$

CASE, CARTRIDGE (BLANK), M27 AND M27 BI, FOR 90 MM. GUN, MI.					
MARCH 8, 1943		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	2	126	
1	B-1545	SYMBOL			
DRG. PERTAINS TO		DFTSMAN 507. CHIEF OF JOL.			
		TRACER DFT. CHIEF WOL. O.D.			
		ENGINEER 507. CHIEF M.T.			
		CHIEF DFTSMAN M.T.			
		SUBMITTED- <i>Milwaukee</i> COL., ORD. DEPT., U. S. A.			
		EXAMINED- <i>E. C. Dobbins</i> LT. COL. ORD. DEPT., U. S. A.			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE- <i>L. G. Luke</i> COL., ORD. DEPT., U. S. A.			
75-1-154		ORDNANCE DEPT. U. S. A.			



LIST OF PARTS								
LINE NO.	NAME OF PART	NUMBER REQD. PER COMPONENT	PIECE-MARK	MATERIAL				REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER	
1	PLUG	1	71-2-128A		PALMETTO PULP		AXS-970	.60
2								
3								
4					GRAPHITE		50-11-41	
5					INK, MARKING, BLACK		36-2	
6								

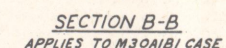
LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC. FOR	50-0-1	DRG. 71-2-128
2			
3	PAINTS AND RELATED MATERIALS, GENERAL SPECIFICATIONS FOR	3-1	36-2
4	GRAPHITE (FOR USE ON AMMUNITION)	50-11-41	DRG. 71-2-128
5	INK, MARKING	36-2	DRG. 71-2-128
6	PLUG, CLOSING, M2, FOR CASE, CARTRIDGE, 120-MM, M24	AXS-970	DRG. 71-2-128

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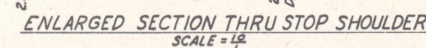
JUNE 15, 1943				CLASS	DIVISION	DRAWING	FILE
REVISIONS				71	2	128	
1	11-10-43			TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
2	8-15-45			DECIMAL ±			
				FRACTIONAL ±			
				ANGULAR ±			
DRG. PERTAINS TO				DTSMAN	TRACER	R.M.S.	ENGINEER
				CHECKER	J.B.		SENIOR ENGINEER
				SUBMITTED: <i>Am Gallagher</i>			
				MAJOR, ORD. DEPT. U.S.A.			
				EXAMINED: <i>A.F. Lyman</i>			
				CAPT., ORD. DEPT. U.S.A.			
				APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: <i>R.M. Smith</i>			
				COL., ORD. DEPT. U.S.A.			
71-9-161				ORDNANCE DEPT. U.S.A.			



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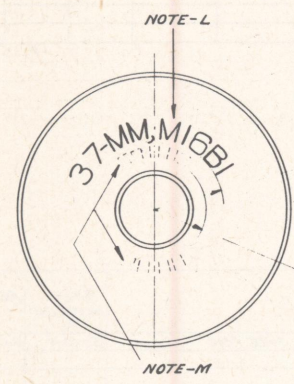


CASE, CARTRIDGE, M30A1, AND M30A1B1
FOR 57-MM RIFLE, M18



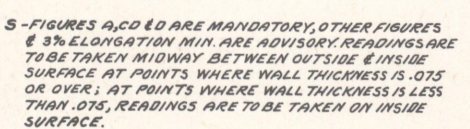
SCALE, INCHES, $\frac{2}{7}$

LEAK TREATMENT & PROTECTIVE FINISH		CLASS		Q 912/08 DRAWING	
		71		2 135	
APPLIC. / D'OPTIERS		DRAWING PERTAINS TO:			
		MAJOR ITEM		PAGE NO.	
ORIGINAL DATE OF DRAWING		OCTOBER 24, 1944			
REV. 1/1/5					
4 11-4-49 ECO 16011		5 4-28-50 ECO 16248			
WEIGHT		Q 807		ADULT PART #	
SCALE		DO		(See Somefield)	
TOLERANCES ON DIMENSIONS (Fractional Dimensions Specified)		CNC		JAC	
SHEET NO. / SHEETS		SUBMITTED		REVISIONS	
EXAMINED		APPROVED		DRAWN BY	
D		COL		COL	




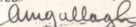
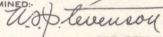
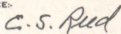
CASE, CARTRIDGE, M16B1 71-2-147A
STEEL
2
1

- INITIALS OR SYMBOL OF MANUFACTURER) AND YEAR OF MANUFACTURE. SIZE AND POSITION OF LETTERS & FIGURES NOT MANDATORY, RAISED METAL DUE TO STAMPING, ALLOWED, .008 MAX. N-THICKNESS OF HEAD MAY VARY BETWEEN THESE LIMITS. P-BURR CAUSED BY REAMING NEED NOT BE REMOVED. R-MACHINE CYLINDRICAL IF NECESSARY BETWEEN LIMITS OF 1.97 DIA. AND 1.96 DIA.

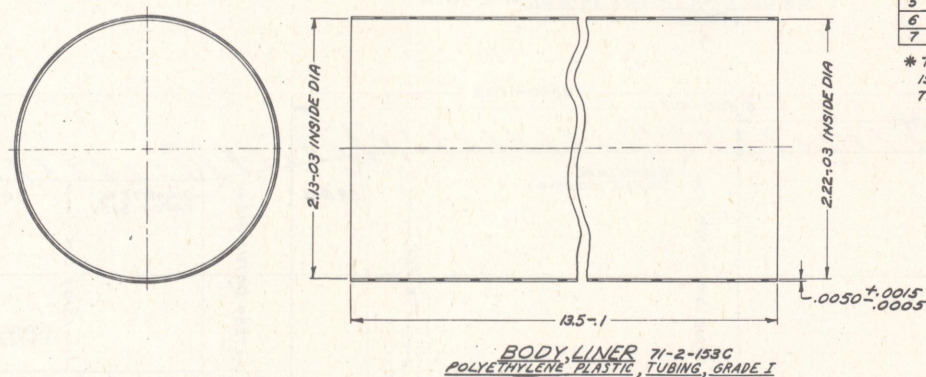
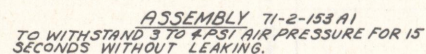


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CASE, CARTRIDGE,
37-MM, M16 B1

CASE, CARTRIDGE, 37-MM, M16B1					
AUGUST 15, 1945		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	2	147	
		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
		D.TSMAN	TRACER	ORD. ENGINEER	
		C.W.F.	C.W.F.	...	
		CHECKED		HEAD. ENGINEER	
		GRT		ENGINE	
		SUBMITTED			
					
		LT. COL. ORD. DEPT. U. S. A.			
		EXAMINED			
					
		ORD. DEPT. U. S. A.			
		APPROVED BY THE CHIEF OF ORDNANCE:			
					
		COL. ORD. DEPT. U. S. A.			
D		ORDNANCE DEPT., U. S. A.			

FOR BRASS CARTRIDGE CASE, SEE 71-2-96



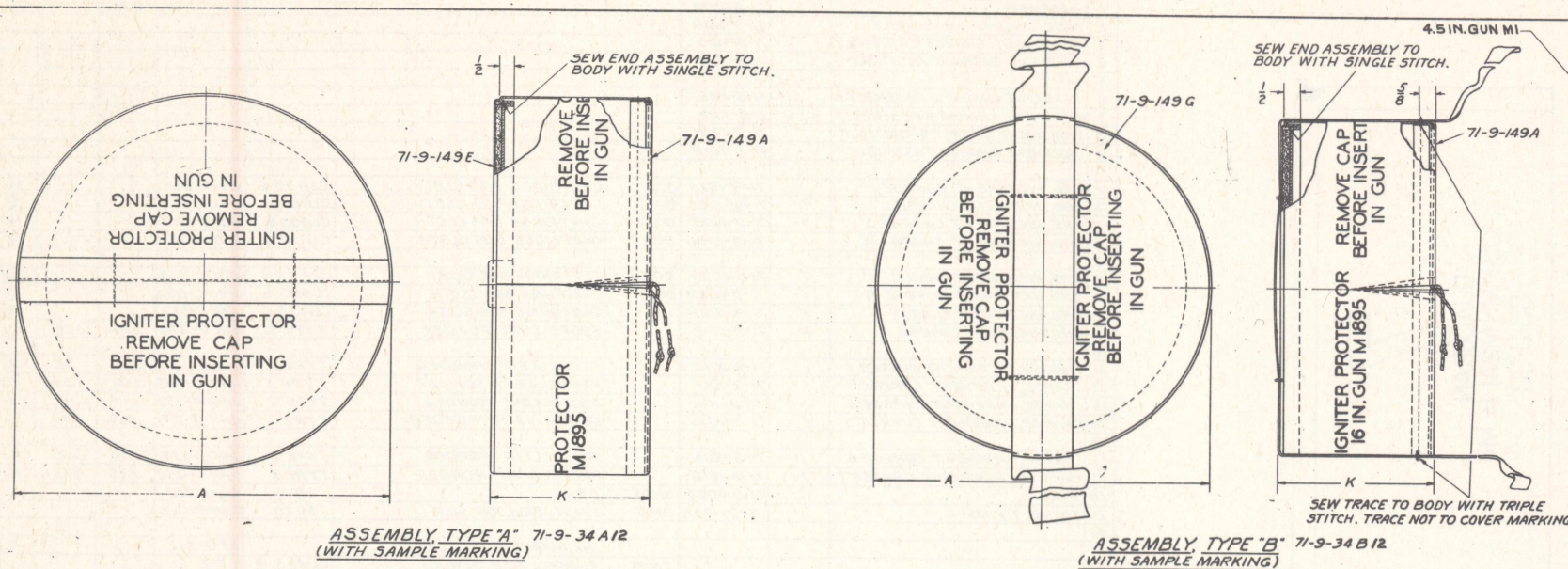
LINE NO	LIST OF SPECIFICATIONS	SPEC NUMBER *	REQUIRED BY
1	AMMUNITION EXCEPT SMALL ARMS AMM, GENERAL SPEC FOR	50-0-1	DWG 71-2-153
2			
3			
4	PLASTIC, POLYETHYLENE, MOLDED AND EXTRUDED SHAPES, SHEETS AND TUBING	AXS-1630	DWG 71-2-153
5			
6			
7			

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NOTICE: THIS DRAWING SHALL NOT BE USED OR REPRODUCED
EITHER WHOLLY OR IN PART EXCEPT WHEN AUTHORIZED IN
CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT

LINER FOR CASE, CARTRIDGE,
57MM, M30A1.
ASSEMBLY AND DETAILS.

[illegible]

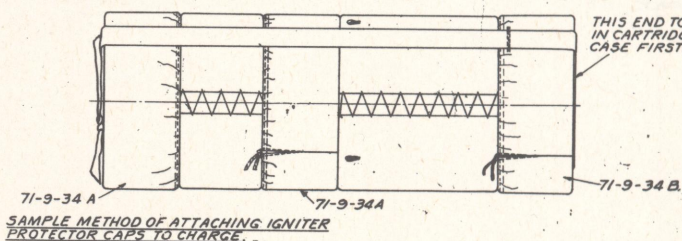
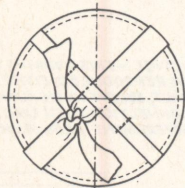


DESIGNATION OF CANNON	DIMENSIONS											
	A	B	C	D	E	F	G	H	I	J	K	L
155 MM. HOW. M1917, M1917A1 & M1918 (CHARGE M1A1)	5 1/4	6 1/4	5 1/4	φ	6 3/4	4 1/2	17 1/2	34	3 1/4	4	2	2
155 MM. HOW. M1917, M1917A1 & M1918 (CHARGE M2) OR (OLD TYPE 1 ZONE CHARGE). 155 MM. GUNS, M1917, M1917A1 & M1918 M1 6 IN. GUNS, M1897 M1, M1900, M1903, M1905, M1908, M1908 M1 & M1908 M2.	6 1/2	7 1/2	6 1/2	φ	8	6 1/2	21 1/2	37	5 1/2	4	2 1/2	6
155 MM. GUN, M1	7	8	7	φ	8 1/2	6 1/2	23	40	5 1/2	4	2 1/2	6
8 IN. HOW. MK. VII, MK. VIII & MK. VIII 1/2	8	9	8	φ	9 1/2	6 1/2	26 1/4	42	5 1/2	6	2 3/4	6 1/2
8 IN. GUNS, M1888, M1888 M1 & M1888 M2 (ALL CHARGES INCLUDING CHARGE FOR NAVY PROJ.) 240 MM. HOW. M1918	9 1/2	10 1/2	9 1/2	160	110	6 1/2	31	47	5 1/2	8	3 1/4	8 1/4
8 IN. GUN, MK. II, MOD. 3A2	9 1/2	10 1/2	9 1/2	160	11	6 1/2	31	47	5 1/2	6	3 1/4	8 1/4
10 IN. GUNS, M1888, M1888 M1, M1888 M2, M1895, M1895 M1, & M1900	11 7/8	12 3/8	11 7/8	135	13 3/4	6 1/2	38 1/4	54	5 1/2	6	3 1/4	10 1/4
10 IN. GUNS, M1888, M1888 M1, M1888 M2, M1895 & M1895 M1 (S.S.)				190	Δ						Δ	
12 IN. MORTAR, M1912 (ZONES 1 TO 6 INCL.)				φ	13 3/8						3 1/2	
12 IN. GUNS, M1888, M1888 M1, M1888 M2, M1888 M2, M1895 & M1895 M1 (CHARGE FOR NAVY PROJ.)	12 1/4	13 1/4	12 1/4	140	13 3/4	6 1/2	39 1/2	55	5 1/2	6	3 1/4	10 5/8
12 IN. MORTARS, M1890, M1890 M1, M1908; M1912 (ZONES 7, 8A TO 10 INCL.)	13 3/4	14 3/4	13 3/4	φ	15 1/4	6 1/2	44 1/4	60	5 1/2	6	3 1/4	11 7/8
12 IN. GUNS, M1888, M1888 M1, M1888 M2, M1888 M2, M1895, M1895 M1 & M1900				150	Δ						Δ	
12 IN. GUNS, M1888 & M1895 M1 (S.S.)				210	Δ						Δ	
14 IN. GUNS, M1907 & M1907 M1	15	16	15	140	16 1/2	6 1/2	48 1/2	64	5 1/2	6	3 1/2	13
14 IN. GUNS, M1910, M1910 M1, M1920 M1 & M1920 M2				160	Δ						Δ	
14 IN. GUN, M1909	17	18	17	160	18 1/4	6 1/2	54 1/2	70	5 1/2	6	3 1/2	14 3/4
16 IN. HOW. M1920				140	Δ						Δ	
16 IN. GUNS, M1919, M1919 M1 & M1919 M2				150	Δ						Δ	
16 IN. GUN, MK. II (NAVY)				150	Δ						Δ	
16 IN. GUN, M1895				280	Δ						Δ	

8 IN. HOW. M1 (CHARGE M2)
8 IN. HOW. M1 (CHARGE M1)
155 IN. HOW. M1 (CHARGE M3)
155 IN. HOW. M1 (CHARGE M4)

LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE MARK	LIST OF PARTS MATERIAL				APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF RAW STOCK PER 1000 ASSEMBLIES (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER			
1	ASSEMBLY, TYPE "A"		71-9-34 A							
2	ASSEMBLY, TYPE "B"		71-9-34 B							
3	BODY ASSEMBLY		71-9-149 A							
4	BODY AND TWINE ASSEMBLY		71-9-149 C							
5	END ASSEMBLY, TYPE "A"		71-9-149 E							
6	END ASSEMBLY, TYPE "B"		71-9-149 G							
7	HANDLE ASSEMBLY		71-9-149 L							
8	TRACE (ALTERNATIVE)	1	71-9-149 P	BOLT	UNBLEACHED COTTON SHEETING		CCC-5-291			(a)
9	BODY	1	71-9-149 D	BOLT	UNBLEACHED COTTON SHEETING		CCC-5-291			
10	END	2	71-9-149 F	BOLT	UNBLEACHED COTTON SHEETING		CCC-5-291			
11	HANDLE	1	71-9-149 M	BOLT	UNBLEACHED COTTON SHEETING		CCC-5-291			
12	PAD	1	71-9-149 K	ROLL	PROTECTING FELT (PAPER)		50-11-70			
13	PAD (ALTERNATIVE)	1	71-9-149 N	ROLL	PROTECTING FELT (PAPER)		50-11-70			
14	TRACE	1	71-9-149 H	ROLL	WOVEN BURLAP BELTING		50-11-56			(b)
15	TWINE, BODY	1	71-9-149 B	NO. 36	HEMP TWINE		T-T-901			
16					INK, MARKING, INDELIBLE		TYPE "B" TT-1-542			
17					THREAD, COTTON MACHINE		TYPE "A1" V-T-276			
18										

(a) OF FIVE SAMPLES TAKEN FROM EACH LOT OF 500 TRACES, THE AVERAGE BREAKING STRENGTH SHALL NOT BE LESS THAN 275 LBS. WITH NO TRACE HAVING LESS THAN 250 LBS. BREAKING STRENGTH.
(b) SUBSTITUTE: (WHEN AUTHORIZED BY CHIEF OF ORDNANCE) COTTON BELTING, SPEC. 50-11-56.



THIS END TO BE INSERTED IN CARTRIDGE STORAGE CASE FIRST.

NOTE:— ALL SEAMS MACHINE LOCK STITCHED WITH COTTON MACHINE THREAD, 3 CORD, TYPE "A1", TICKET NO. 20, 10 TO 14 STITCHES PER INCH.
* DIMENSIONS FOR IGNITER PROTECTOR CAPS SHOWN ARE FOR MAX. SIZE CHARGE.
Δ NO HANDLE REQUIRED ON TYPE "B" CAPS.
* NO TRACE REQUIRED ON TYPE "A" CAPS.
3.5. SINGLE SECTION.
DIMENSIONS MAY VARY $\pm \frac{1}{8}$ FROM THOSE SHOWN.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG. 71-9-34
2			
3	FELT, PROTECTING (PAPER)	50-11-70	DRG. 71-9-149
4	INK, MARKING, INDELIBLE (FOR) FABRICS	TT-1-542	DRG. 71-9-149
5	SHEETING, COTTON, UNBLEACHED, WIDE	CCC-5-291	DRG. 71-9-149
6	TEXTILES; TEST METHODS	CCC-T-191	V-T-276
7	THREAD; COTTON	V-T-276	DRG. 71-9-149
8	TRACES FOR IGNITER PROTECTOR CAPS	50-11-56	DRG. 71-9-149
9	TWINE; HEMP	T-T-901	DRG. 71-9-149
10			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

IGNITER PROTECTOR CAPS TO BE USED AS FOLLOWS:—
ON BASE END OF ALL CHARGES.
ON BOTH ENDS OF EACH SECTION OF ALL STACKED TYPE CHARGES.
ON BOTH ENDS OF SINGLE SECTION CHARGES AND ON TOP END OF UPPER SECTION IN EACH CARTRIDGE STORAGE CASE FOR ALL SECTIONED CHARGES FOR ALL MODELS SEACOAST GUNS.
ON BOTH ENDS OF BASE SECTION CHARGE FOR 12 INCH SEACOAST MORTARS.
WHEN CHARGE CONSISTS OF BASE SECTION ONLY.
ON BOTH ENDS OF BASE CHARGE AND TOP END OF INCREMENT CHARGE FOR THE 8 IN. GUN, MK. II, MOD. 3A2.
TYPE "B" ON BASE END OF CHARGES FOR 16 IN. HOWITZER, M1920, AND FOR GUNS OF 8 INCH AND LARGER CALIBER.
TYPE "A" FOR ALL OTHER PURPOSES.

LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER
1	ASSEMBLY	71-9-34
2	DETAILS	71-9-149

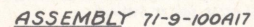
WITH 71-9-149 SUPERSEDES OLD TRACING 71-9-34 UNDER REVISION DATE OF FEB. 2, 1937.

CAPS, IGNITER PROTECTOR ASSEMBLY.

AUG. 10, 1917.	CLASS	DIVISION	DRAWING	FILE
REVISIONS	71	9	34	
5 7-23-35	10	8-30-41		
6 2-2-37	11	4-22-42		
7 5-26-38	12	10-8-43		
8 6-1-39				
9 3-11-41				

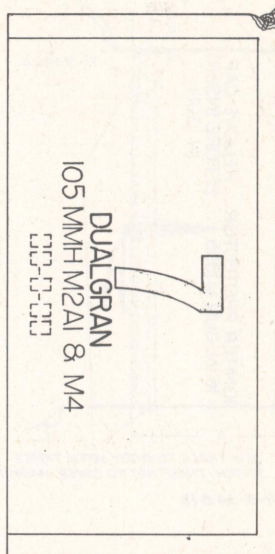
DRG. PERTAINS TO

DESIGNED BY	TRACED BY	ENGINEER
ASO.	ASO.	ASO.
CHECKED BY	CHECKED BY	CHECKED BY
ASO.	ASO.	ASO.
SUBMITTED TO	SUBMITTED TO	SUBMITTED TO
ASO.	ASO.	ASO.
EXAMINED BY	EXAMINED BY	EXAMINED BY
ASO.	ASO.	ASO.
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:
ASO.	ASO.	ASO.
LT. COL. ORDN. DEPT. U.S.A.	LT. COL. ORDN. DEPT. U.S.A.	LT. COL. ORDN. DEPT. U.S.A.
ORDNANCE DEPT. U.S.A.	ORDNANCE DEPT. U.S.A.	ORDNANCE DEPT. U.S.A.



NOTE:-
F-ATTACH TWINE TO INCREMENTS BY PULLING THROUGH OUTSIDE OF STITCHING AND WITHIN THE RECTANGLE FORMED BY THE INTERSECTION OF THE STITCHINGS. THE TIE CORD SHALL PASS THROUGH TWO THICKNESSES OF CLOTH NOT LESS THAN $\frac{1}{8}$ INCH FROM THE UNRAVELED EDGE OF EITHER PIECE. TIE TWINE IN SQUARE KNOT.

SUPERSEDES 71-9-100 WITH CHANGE OCT 14, 1949



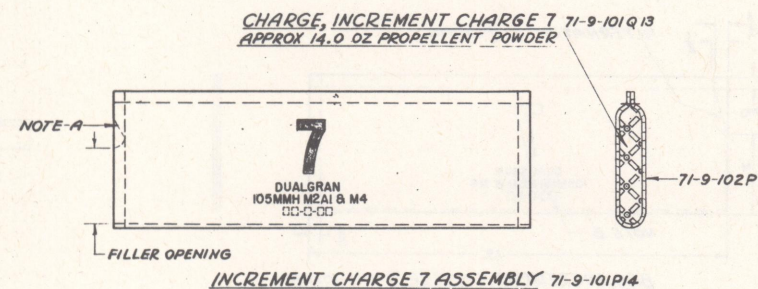
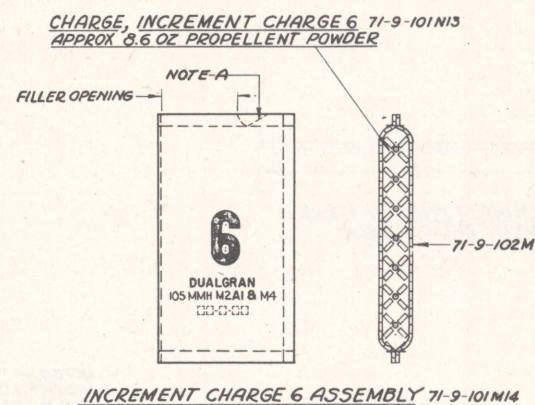
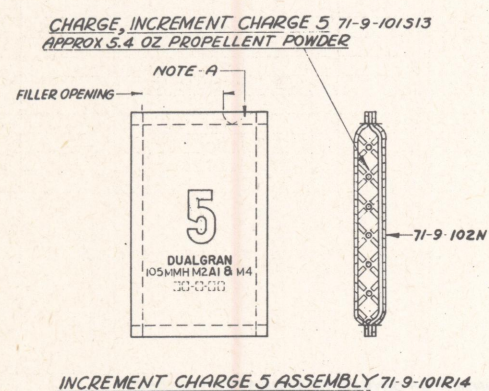
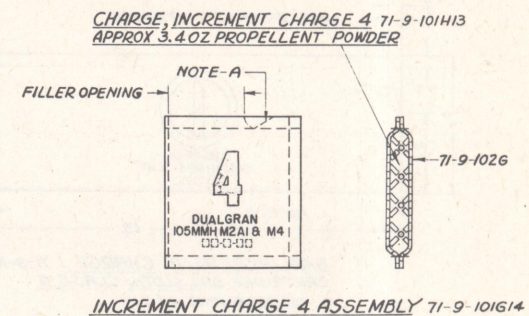
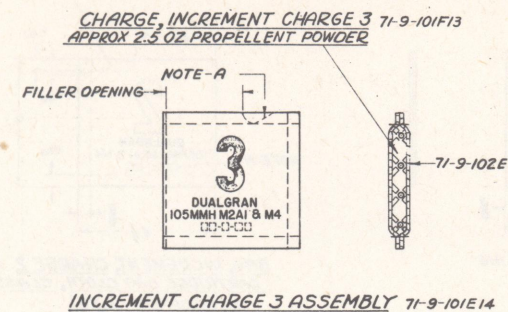
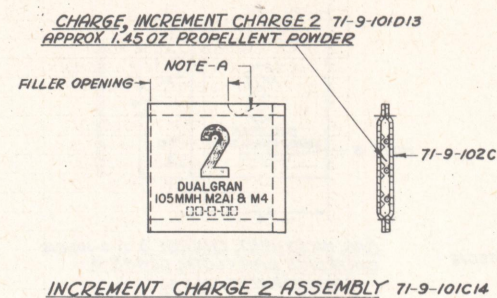
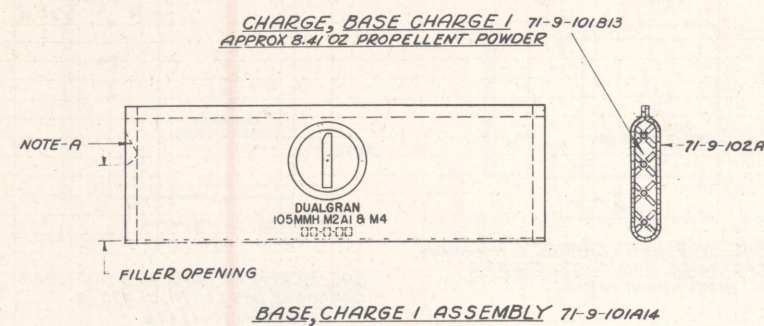
(d) ALTERNATIVE MATERIAL:-(e) INK, PRINTER'S, BLACK, COMMERCIAL.
(b) ALTERNATIVE MATERIAL:-(e) CARTRIDGE BAG CLOTH, CLASS E, SPEC JAN-C-539(d).
(c) APPROXIMATE -EXACT WEIGHT WILL BE FURNISHED BY CONTRACTING OFFICER.
(d) SUBSTITUTE MATERIAL (WHEN AUTHORIZED BY THE CHIEF OF ORDNANCE):-CARTRIDGE CLOTH, GRADE C, SPEC 50-11-65.
(e) ALTERNATIVE MATERIALS ARE INTENDED TO BE USED ONLY WHEN PRESCRIBED MATERIALS ARE NOT AVAILABLE.

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

NOTICE:-THIS DRAWING SHALL NOT BE USED
OR REPRODUCED EITHER WHOLLY OR IN
PART, EXCEPT WHEN AUTHORIZED IN
CONNECTION WITH UNITED STATES
GOVERNMENT PROCUREMENT.

17	ECO 16188	2-15-50	
16	ECO 16063	10-14-49	
SYN	DESCRIPTION	DATE	APPROVAL

[illegible]

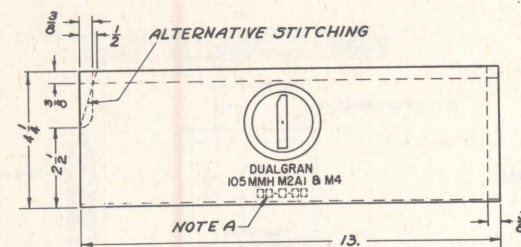


NOTE:-
A-FILLING OPENING, SINGLE STITCH AFTER FILLING WITH CHARGE. ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING THREAD, GRADE B, 8 TO 12 STITCHES PER INCH.

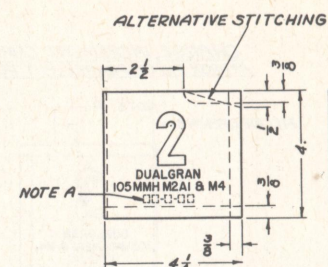
NOTICE:-THIS DRAWING SHALL NOT BE USED OR REPRODUCED EITHER WHOLLY OR IN PART, EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

SUPERSEDES 71-9-101 WITH CHANGE OCT 14, 1949

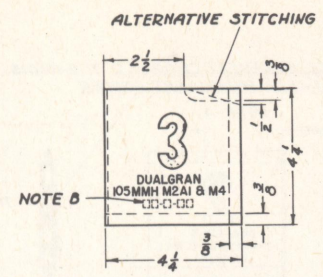
PHYSICAL PROPERTIES		TOLERANCES ON DECIMALS		ORIGINAL DATE OF DRAWING JULY 15 1930		CHARGE, PROPELLING, DUALGRAN FOR 105-MM HOWITZERS, M2A1 AND M4. CHARGE ASSEMBLIES.		ORDNANCE DEPT DEPT OF THE ARMY	
17		ASSEMBLY	FRACTIONS	DESIGNED BY	CHECKED	ENGINEER	105	DATE	10-14-49
18		MATERIAL		ENGINEER	105	ENGINEER	105	DATE	10-14-49
19		HEAT TREATMENT		ENGINEER	105	ENGINEER	105	DATE	10-14-49
20		FINAL PROTECTIVE FINISH		ENGINEER	105	ENGINEER	105	DATE	10-14-49
21		DO NOT	APPLY PART NO.	APPROVED BY ORDER OF THE	CHIEF OF DEPT.	SCALE	UNIT WT	SHEET	OF
22		DO	AS SPECIFIED						



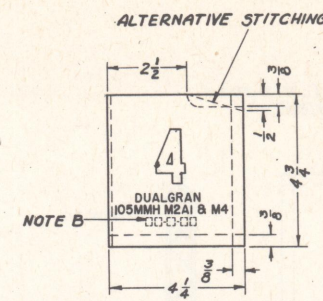
BAG, INCREMENT, CHARGE 1 71-9-102A16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $8\frac{1}{2} \times 13$.



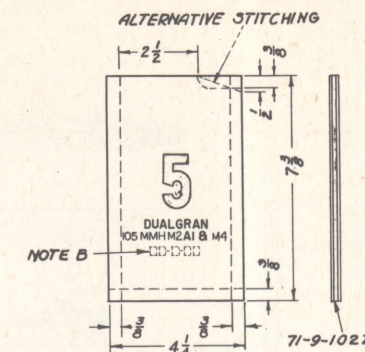
BAG, INCREMENT, CHARGE 2 71-9-102C16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $4 \times 8\frac{1}{2}$



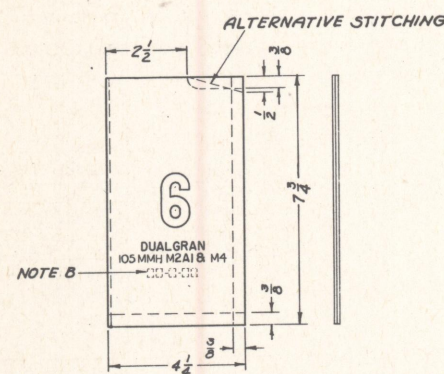
BAG, INCREMENT, CHARGE 3 71-9-102E16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $4\frac{1}{2} \times 8\frac{1}{2}$



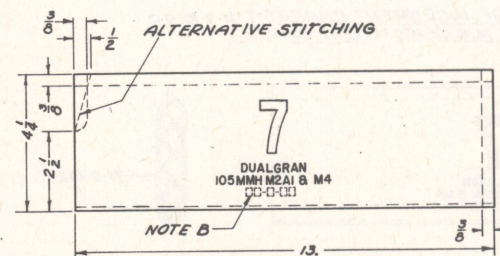
BAG, INCREMENT, CHARGE 4 71-9-102G16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $4\frac{1}{2} \times 8\frac{1}{2}$



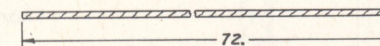
BAG, INCREMENT, CHARGE 5 71-9-102N16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $4\frac{1}{2} \times 7\frac{1}{2}$



BAG, INCREMENT, CHARGE 6 71-9-102M16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $7\frac{3}{4} \times 8\frac{1}{2}$



BAG, INCREMENT, CHARGE 7 71-9-102P16
CARTRIDGE BAG CLOTH, CLASS G
DEVELOPMENT = $8\frac{1}{2} \times 13$.



TWINE, TYING 71-9-102W15
TWINE, BALLOON SILK

FOIL 71-9-102Z16
SHEET, LEAD
 $4\frac{1}{2} \times 15 \times .002$ THICK

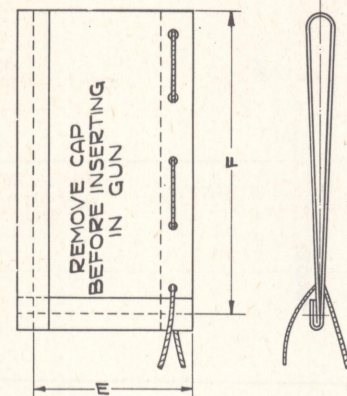
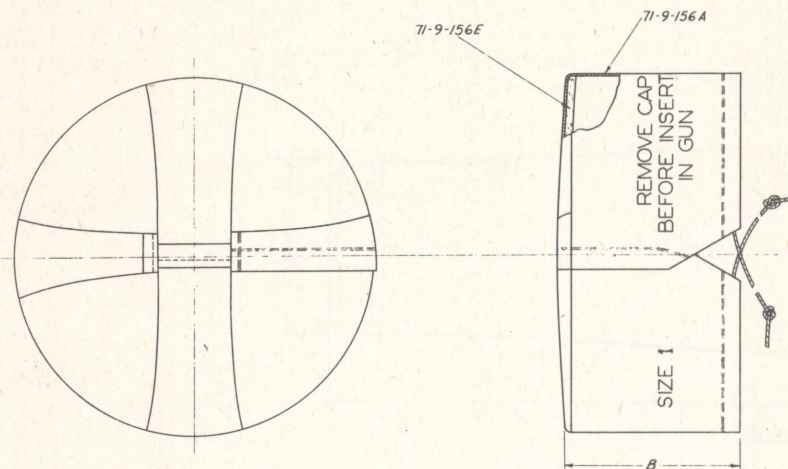
- NOTES:-
- A-INSERT LOT NUMBER OF SINGLE PERFORATED POWDER FOR INCREMENTS 1 AND 2.
 - B-INSERT LOT NUMBER OF MULTIPERFORATED POWDER FOR INCREMENTS 3, 4, 5, 6 AND 7.
 - C-ALL MARKING ON CARTRIDGE BAG EXCEPT CHARGE NUMBERS TO BE $\frac{1}{8}$ INCH BLOCK LETTERS AND FIGURES. CHARGE NUMBERS TO BE NOT LESS THAN $\frac{1}{8}$ INCH FIGURES (E).
 - D-ALTERNATIVE:-THE BAG MAY BE CONSTRUCTED WITHOUT THE CROSS STITCH WHICH PARTIALLY CLOSSES INCREMENT.
 - E-USE BLACK MARKING INK. PRINTING MAY APPEAR AT RANDOM ON CHARGE, BUT FULL COMPREHENSIVE INFORMATION MUST BE MAINTAINED.
 - F-BASIC DIMENSIONS OF DETAILED PARTS ARE CALCULATED TO GIVE AN ASSEMBLED CHARGE OF DESIRED DIMENSIONS. ESTABLISHED BASIC DETAILED DIMENSIONS MAY VARY $\pm \frac{1}{8}$ INCH.
 - G-ALL SEAMS SINGLE MACHINE LOCK STITCHED WITH SILK SEWING THREAD, CLASS B, 8 TO 12 STITCHES PER INCH. ALTERNATIVE:-TYPE 401 CHAIN STITCH IS ALLOWED IF TRANSVERSED BY LOCK STITCH.

NOTICE:-THIS DRAWING SHALL NOT BE USED OR REPRODUCED EITHER WHOLLY OR IN PART, EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

SYN	DESCRIPTION	DATE	APPROVAL
16	ECO 14188	2-8-49	
17	ECO 16063	10-14-49	
REVISIONS			
ORDNANCE DEPT DEPT OF THE ARMY			
71-9-102			
E SHEET OF			

PHYSICAL PROPERTIES	TOLERANCES ON DIMENSIONS	ORIGINAL DATE	CHARGE, PROPELLING, DUALGRAN FOR 105-MM HOWITZERS M2AI AND M4 DETAILS.
TP	ANGLES	71-9-100	
TS	MATERIAL	71-9-101	
CLZ	HEAT TREATMENT		
SH	DO NOT APPLY PART NO.		
SH	DO AS SPECIFIED		
APPROVED BY CHIEF OF THE			
E			

SUPERSEDES 71-9-102 WITH CHANGE OCT. 14, 1949



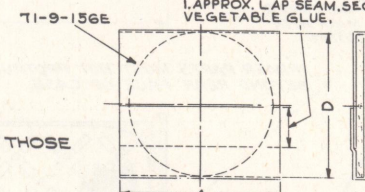
ASSEMBLY (ALTERNATIVE) 71-9-155B3

NOTES:-
DIMENSIONS FOR IGNITER PROTECTOR CAPS
SHOWN ARE FOR MAX. SIZE CHARGE.
DIMENSION MAY VARY $\pm \frac{3}{8}$ INCH FROM THOSE
SHOWN IN TABLE.

DESIGNATION OF CANNON		DIMENSIONS					
		A	B	C	D	E	F
155 MM. HOW. M1917 M1917A1 & M1918 (CHARGE M1A)	1	5 1/4	3 1/4	34	5 1/4	6	8 1/2
4.5 IN. GUN, M1							
155 MM. HOW. M1 (CHARGE M3)							
155 MM. HOW. M1917, M1917A1 & M1918 (CHARGE M2) OR (OLD TYPE 7 ZONE CHARGE)	6	6	5 1/4	37	6	8 1/2	9 3/4
155 MM. GUNS, M1917, M1917A1 & M1918M1							
155 MM. HOW. M1 (CHARGE M4)							
155 MM. GUN, M1							
8 IN. HOW. M1 (CHARGE M1)	2	7	5 1/4	39	7	8 3/4	11
8 IN. HOW. MK VII MK VII & MK VIII 1/2							
8 IN. HOW. M1 (CHARGE M2)	3	8	5 1/4	42	8	9 1/4	12 1/2
240 MM. HOW. M1918	4	9 1/2	5 1/4	47	9 1/2	10	15
6 IN. GUN M1917M1, M1900, M1903, M1905, M1908, M1908M1, AND M1908M2	2	6 1/2	5 1/4	37	6 1/2	8 1/2	9 3/4

Φ NOTES:-
OTHER METHODS OF FORMING THE CAPS MAY BE PERMITTED PROVIDED ALL DIMENSIONS ARE MET AND THE FINISHED CAP WILL FIT SNUGLY ON A CYLINDER HAVING THE DIAMETER OF DIMENSION "A".

EITHER METHOD OF RETAINING THE BODY TWINE MAY BE USED.
+ FOR DIMENSIONS "C" AND "D" SEE DRG. 71-9-156,
1. APPROX. LAP SEAM, SECURE WITH VEGETABLE GLUE.



PAD, PROTECTOR IGNITER & SHEATH ASSEMBLY (ALT) 71-9-155D6

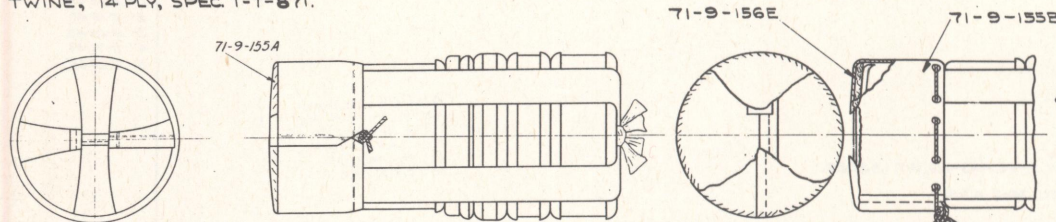
SHEATH, PAD, PROTECTOR 71-9-155C6
30 LB KRAFT PAPER, COMMERCIAL

PROPELLING CHARGE DATA		DIMENSIONS	
WEAPON	CHARGE	A	D
4.5 IN GUN M1	M1	4.50	4.00
155 MM. GUN M1	-	7.00	6.50
8 IN HOW M1	M2	8.00	7.50

NOTE:- PLACE IN POSITION WITH SEAM DOWN

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER OF PARTS COMPONENT	PIECE-MARK	SIZE OR FORM	MATERIAL	GRADE	SPEC. NUMBER	APPROXIMATE WEIGHT (POUNDS)	REMARKS
1	ASSEMBLY		71-9-155A						
2	BAG ASSEMBLY		71-9-156D						
3	BODY ASSEMBLY		71-9-156A						
4	BODY AND TWINE ASSEMBLY		71-9-156B						
5	PAD, PROTECTOR IGNITER & SHEATH ASSY (ALT)	1	71-9-155D						
6	BODY	1	71-9-156F	SHEET	KRAFT PAPER, WATERPROOFED	TYPE "A"	UU-P-271		Σ
7	SHEATH, PAD, PROTECTOR	1	71-9-155C	SHEET	KRAFT PAPER	30 LB	COMMERCIAL		
8	PAD	1	71-9-156E	ROLL	PROTECTING FELT (PAPER)		50-11-70		
9									
10	TWINE, BODY	1	71-9-156C	NO. 36	HEMP TWINE		T-T-901		Φ
11									
12					INK, PRINTER'S BLACK		COMMERCIAL		
13					THREAD, COTTON MACHINE	TYPE 1A1	V-T-276		
14					GLUE, VEGETABLE		3-169		

Σ COARSE CREPED PAPER
Φ ALTERNATIVE MATERIAL: JUTE TWINE, TYPE "A", NO. 36, SPEC. T-T-911 OR
COTTON WRAPPING TWINE, 14 PLY, SPEC. T-T-871.



SAMPLE METHOD OF ATTACHING IGNITER PROTECTOR CAPS TO CHARGE

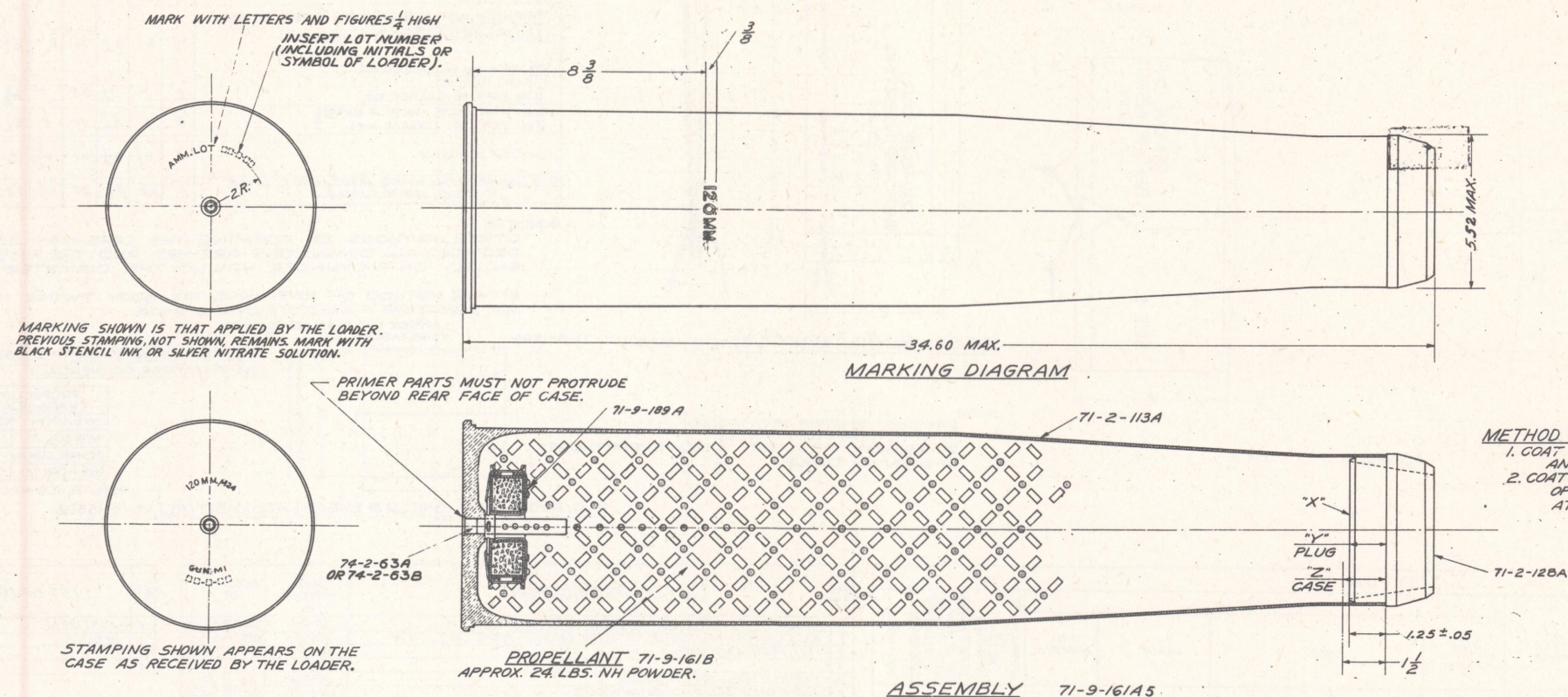
SAMPLE METHOD OF ATTACHING ALTERNATIVE IGNITER PROTECTOR CAPS TO CHARGE.
NOTE:- PLACE PAD ON IGNITER END OF CHARGE BEFORE ASSEMBLING IGNITER PROTECTOR CAP TO CHARGE.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG 71-9-155
2	BAGS, IGNITERS AND IGNITER PROTECTOR CAPS FOR PROPG. CHGS. MFR. OF	50-65-1	DRG 71-9-155
3	FELT, PROTECTING (PAPER)	50-11-70	DRG 71-9-156
4			
5	PAPER, GENERAL SPECIFICATIONS	UU-P-31	UU-P-271
6	PAPER, KRAFT, WRAPPING, WATERPHOOFED	UU-P-271	DRG 71-9-156
7	GLUE, VEGETABLE	3-169	DRG 71-9-155
8	STITCHES, SEAMS AND STITCHING	DDD-5-751	DRG 71-9-156
9	THREAD, COTTON	V-T-276	DRG 71-9-156
10	TWINE, HEMP	T-T-901	DRG 71-9-156
11	TWINE, JUTE	T-T-911	DRG 71-9-156
12	TWINE, COTTON, WRAPPING	T-T-871	DRG 71-9-156

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER
1	ASSEMBLY	71-9-155
2	DETAILS	71-9-156
3		
4		

CAPS, IGNITER PROTECTOR (PAPER) ASSEMBLY			
JUNE 29, 1939			
REVISIONS	CLASS	EXTENSION	DATE
1 10-29-39	71	9	155
2 18-30-41			
3 10-20-41			
4 11-6-41			
5 11-16-42			
SYMBOL			
DRG. PERTAINS TO			
CAPS			
AER			
EQU			
M.T			
CAPT			
CO.			
LT. COL.			



LIST OF COMPONENTS

LINE NO.	NAME OF COMPONENT	DRAWING NUMBER OR PIECEMARK	SPECIFICATION	APPROX. WEIGHT PER UNIT ASSEMBLY (POUNDS)	REMARKS
1	ASSEMBLY	71-9-161A		49.71	
2	BOX, PACKING	76-1-414	50-62-4	32.0	
3	CASE, CARTRIDGE, 120 MM. M24	71-2-113A	50-46-1	24.70	
4	PROPELLANT (NH POWDER)	71-9-161B	JAN-P-270	24.00	
5	CONTAINER, FIBER, M79	76-10-80	50-61-3	11.85	
6	ASSEMBLY (IGNITER)	71-9-189A	50-65-1	.53	
7	INK, STENCIL, OPAQUE, BLACK	TT-1-558			(a)
8	PACKING AND MARKING OF FIBER CONTAINERS	75-14-343			
9	PACKING AND MARKING OF PACKING BOX	20-4-311	100-2		
10	PLUG, CLOSING, M2	71-2-128A	AXS-970	.35	(b)
11	PRIMER, PERCUSSION, M181A2	74-2-63A	50-48-10	.13	(d)
12	SHELLAC, ORANGE	TT-5-271			

(a) ALTERNATIVE: SILVER NITRATE SOLUTION.
(b) SUBSTITUTE: PLUG, CORK, M1, DRG. 71-2-114A, SPEC. PXS-719, WT. .35 LBS.
(d) ALTERNATIVE: PRIMER, PERCUSSION, M1A2, DRG. 74-2-63B.

NOTICE: THIS DRAWING
SHALL BE USED FOR THE
CONSTRUCTION OF THE
CHARGE, PROPELLING, M15
FOR 120 MM. GUN
ASSEMBLY.



CHARGE, PROPELLING, M15
FOR 120 MM. GUN
ASSEMBLY

SEPT. 11, 1939

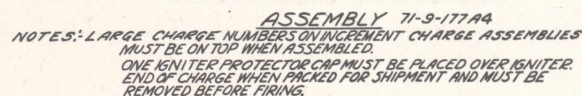
71 9 161

- 8-28-41
- 4-16-42
- 9-10-43
- 8-15-45
- 12-24-48

H.G.T. H.32

Marshall

S. R. H. H. H.



LINE NUMBER	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE-MARK	MATERIAL				APPROXIMATE UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF PAINT STUDY PER 1000 ASSEMBLIES (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NO.			
1	ASSEMBLY		71-9-177A				50-63-1	5.94		
2	BASE CHARGE 1, AND IGNITER ASSEMBLY		71-9-178A					2.19		
3	INCREMENT CHARGE 2 ASSEMBLY		71-9-178D					.52		
4	INCREMENT CHARGE 3 ASSEMBLY		71-9-178F					.68		
5	INCREMENT CHARGE 4 ASSEMBLY		71-9-178H					.96		
6	INCREMENT CHARGE 5 ASSEMBLY		71-9-178L					1.53		
7										
8	BODY, BASE CHARGE 1	1	71-9-179D	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.084	89. (f)	(a) (c)
9	BODY, INCREMENT CHARGES 2 & 3	2	71-9-179F	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.009	32 (f)	(a) (c)
10	BODY, INCREMENT CHARGE 4	1	71-9-179P	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.014	51. (f)	(a) (c)
11	BODY, INCREMENT CHARGE 5	1	71-9-179S	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.019	71. (f)	(a) (c)
12	BOTTOM, IGNITER, INNER	1	71-9-179B	BOLT	CARTRIDGE BAG CLOTH	CLASS C	JAN-C-539	.008	22 (f)	
13	BOTTOM, IGNITER, OUTER	1	71-9-179A	BOLT	CARTRIDGE BAG CLOTH	CLASS C	JAN-C-539	.008	22 (f)	
14										
15										
16										
17										
18	CHARGE, BASE, 1	1	71-9-178C		PROPELLENT POWDER		JAN-P-270	1.906	1906.	(b)
19	CHARGE, IGNITER	1	71-9-178B		BLACK POWDER	A-1	JAN-P-223	.108	108.	
20	CHARGE, INCREMENT CHARGE 2	1	71-9-178E		PROPELLENT POWDER		JAN-P-270	.500	500.	(b)
21	CHARGE, INCREMENT CHARGE 3	1	71-9-178G		PROPELLENT POWDER		JAN-P-270	.656	656.	(b)
22	CHARGE, INCREMENT CHARGE 4	1	71-9-178A		PROPELLENT POWDER		JAN-P-270	.938	938.	(b)
23	CHARGE, INCREMENT CHARGE 5	1	71-9-178M		PROPELLENT POWDER		JAN-P-270	1.563	1563.	(b)
24	STRAP TYING	4	71-9-179N	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.012	171. (f)	(a) (c)
25	TOP BASE CHARGE 1 & BOTTOM, INCREMENT CHARGE	5	71-9-179E	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.005	20. (f)	(a) (c)
26	TOP INCREMENT CHARGE 2	1	71-9-179G	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.005	20. (f)	(a) (c)
27	TOP INCREMENT CHARGE 3	1	71-9-179K	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.005	20. (f)	(a) (c)
28	TOP INCREMENT CHARGE 4	1	71-9-179M	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.005	20. (f)	(a) (c)
29	TOP INCREMENT CHARGE 5	1	71-9-179R	BOLT	CARTRIDGE BAG CLOTH	CLASS E	JAN-C-539	.005	20. (f)	(a) (c)
30										
31										
32					DYE	CLASS 1	JAN-D-511			
33					DYE	CLASS 2	JAN-D-511			
34					INK, MARKING, INDELIBLE	TYPE "B"	TF-I-542			(c)
35					THREAD, SILK SEWING	B	7-7			(h)

(a) IF SUPPLY OF CLASS "E" CLOTH IS NOT AVAILABLE, CLASS "D" MAY BE USED. (R)
 (b) APPROXIMATE; EXACT WEIGHT WILL BE FURNISHED BY CONTRACTING OFFICER.
 (c) OPTIONAL; INK, MARKING, PRINTERS, BLACK, COMMERCIAL. (R)
 (d) IGNITER PROTECTOR CAP TO BE SUPPLIED IN ACCORDANCE WITH REQUIREMENTS AS SET FORTH ON DRG. 71-9-34 OR 71-9-155.
 (e) SUBSTITUTE MATERIAL (WHEN AUTHORIZED BY THE CHIEF OF ORDNANCE), CARTRIDGE CLOTH, COTTON, GRADE "B", SPEC. 50-11-65. (R)
 (f) SQUARE YARDS.

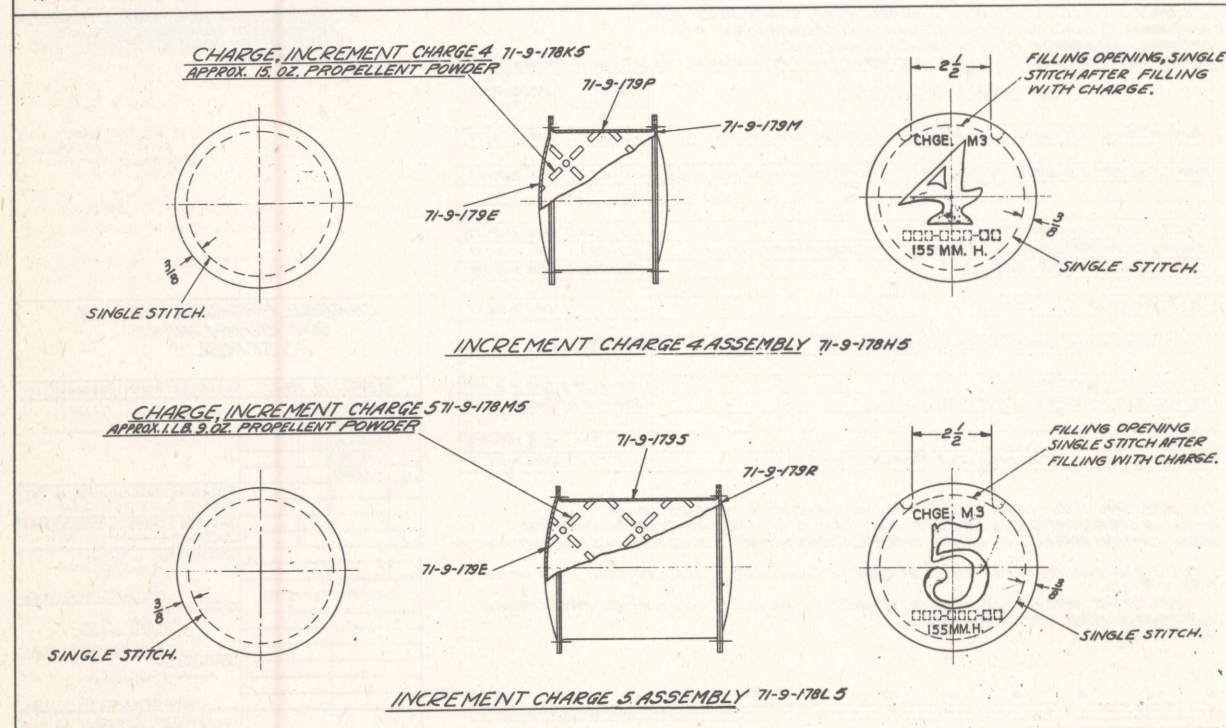
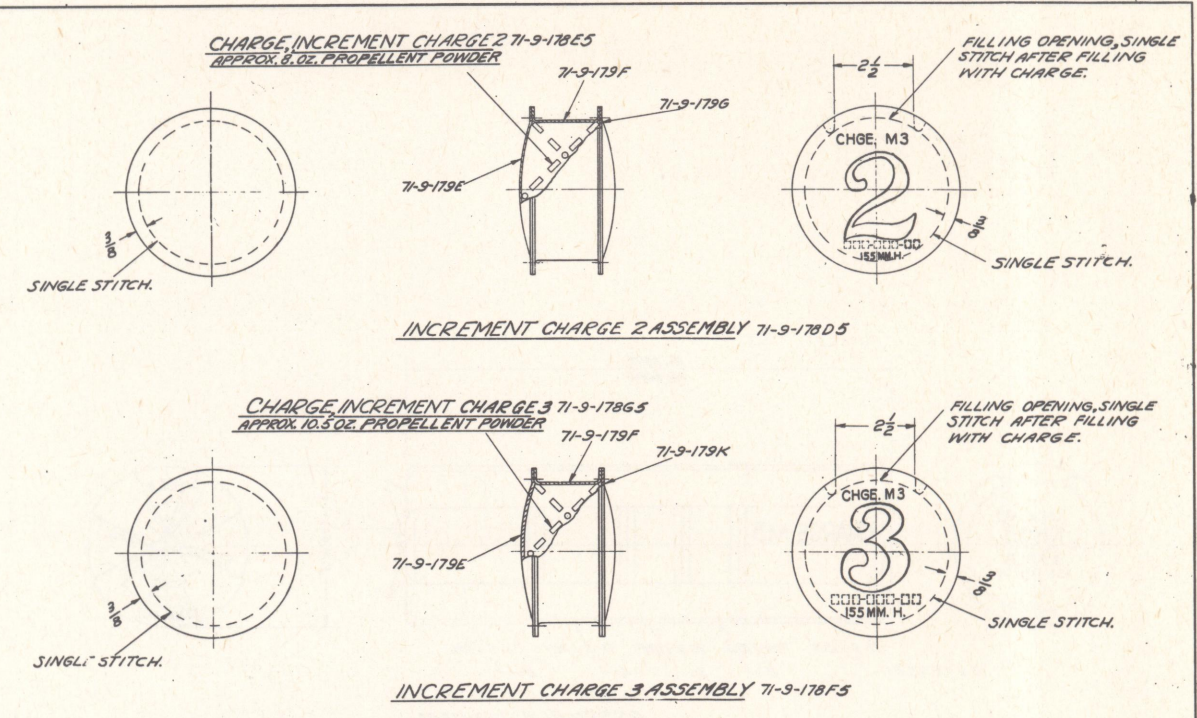
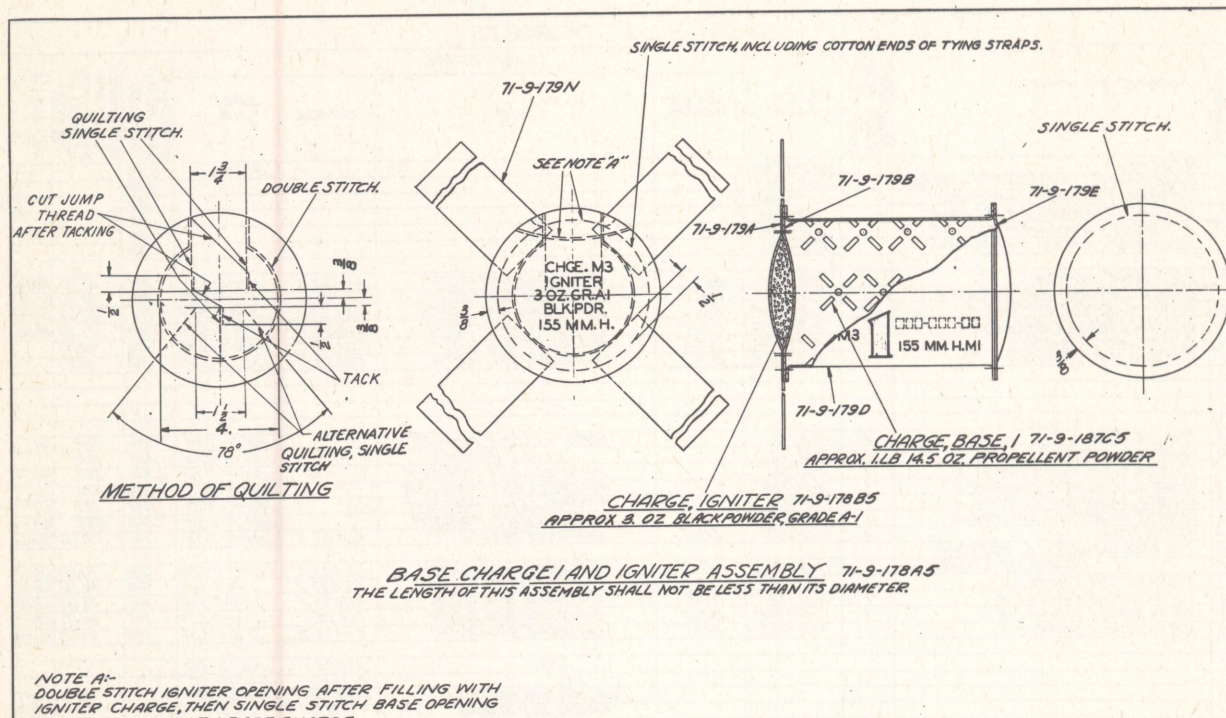
* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY.
WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER.
SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

(h) SPECIFIC MATERIAL (WHEN AUTHORIZED BY CHIEF OF ORDNANCE); THREAD, COTTON, 3 PLY NO. 20,
5/16" V-T-276.(K)

(K) ALTERNATIVE MATERIALS ARE INTENDED TO BE USED ONLY WHEN PRESCRIBED
MATERIALS ARE NOT AVAILABLE.

NOTICE: THIS DRAWING SHALL NOT BE USED FOR REPRODUCTION EITHER WHOLLY OR IN PART EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

CHARGE, PROPELLING, M3 FOR 155 MM. HOW. MI. ASSEMBLY.			
SEPT 15, 1941.		CLASS DIVISION DRAWING FILE	
REVISONS		71	9 177
1	11-19-41		
2	10-16-43		
3	3-19-45		
4	1-24-49		
		DFTSMAN W.M.R.	TRACER J.F.H.
		ENGINE. IN CHG. JAL	
		CHECKER C.B.C.	CHECKER
		CHIEF DFTSMAN M.T.	
		SUBMITTED.	
		Jew Jones	
DRG. PERTAINS TO		ASST. JR. DEPT. USA.	
		EXAMINED.	
		L.T. COLORD. DEPT. USA.	
		APPROVED.	
		BRO. GEN. ORD. DEPT. USA.	
		PICATINNY ARSENAL, U.S.A.	

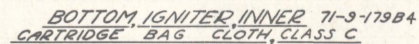
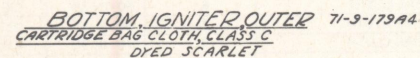


NOTES:-
ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING THREAD, GRADE "B",
8 TO 12 STITCHES PER INCH.
DIMENSIONS MAY VARY $\pm \frac{1}{8}$ FROM THOSE SHOWN.

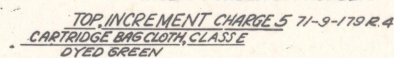
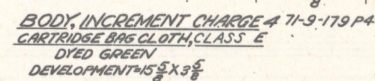
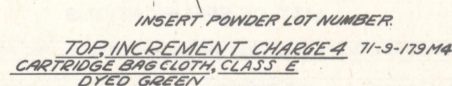
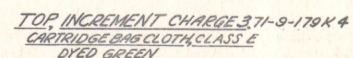
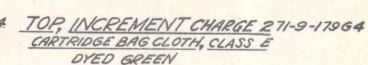
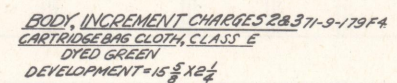
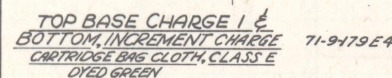
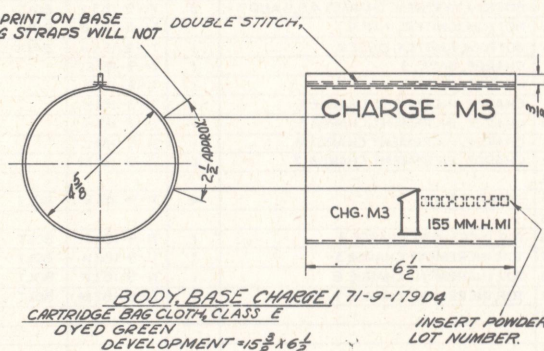
SCALE, INCHES, $\frac{1}{2}$

NOTICE: THIS DRAWING SHALL NOT BE USED FOR REPRODUCTION WITHOUT THE WRITTEN AUTHORIZATION OF THE UNITED STATES GOVERNMENT PROCUREMENT.

CHARGE, PROPELLING, M3 FOR 155 MM. HOWMI. DETAILS.						
SEPT. 15, 1941			CLASS	DIVISION	DRAWING	FILE
REVISIONS			71	9	178	
1	11-19-41		DFTSMAN W.M.R. CHECKER C.B.C.	TRACER J.F.H. CHECKER	ENG. IN CHG. M.R. CHIEF DFTSMAN M.T.	
2	10-14-43					
3	3-19-45					
4	5-21-46					
5	1-24-49					
			SUBMITTED: <i>See Record</i>			
DRG. PERTAINS TO			RECORD, DEPT. U.S.A.			
71-9-177			EXAMINED: <i>Ed Storm</i>			
			ORD. DEPT. U.S.A.			
			APPROVED: <i>W. H. H. H. H.</i>			
			LT. COLORD, DEPT. U.S.A.			
			PICATINNY ARSENAL, U.S.A.			



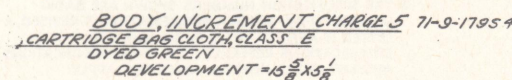
SEPARATE LINES OF PRINT ON BASE
BODY SO THAT TYING STRAPS WILL NOT
OBSCURE MARKING.



NOTES:-
ALL MARKING ON CARTRIDGE BASE EXCEPT CHARGE
NUMBERS AND MARKING ON BASE BODY TO BE
NOT LESS THAN $\frac{1}{8}$ INCH LETTERS AND FIGURES.
THE PHRASE "CHARGE M3" ON BASE BODY TO BE
NOT LESS THAN $\frac{1}{8}$ INCH HIGH.
CHARGE NUMBER ON TOP OF BAG AND ON BASE
BODY TO BE NOT LESS THAN $2\frac{1}{2}$ INCHES HIGH.
MARK WITH INDELIBLE MARKING IN TYPE "B".

ALL SEAMS MACHINE LOCK STITCHED WITH SILK
SEWING THREAD, GRADE "B" 8 TO 12 STITCHES PER INCH.

FOR ALTERNATIVE MATERIALS, SEE LIST OF PARTS.

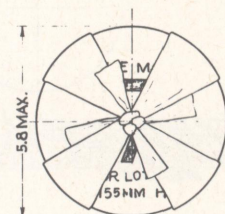
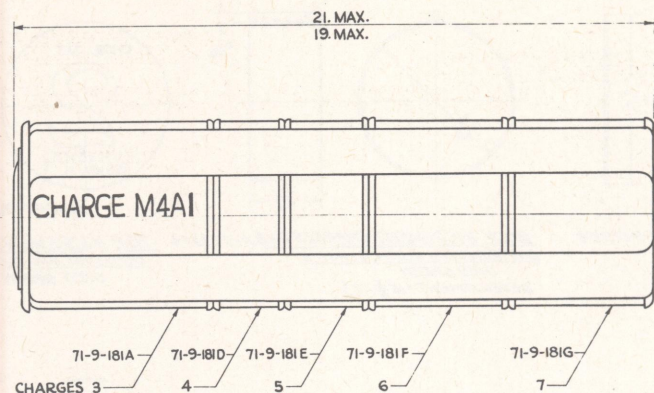
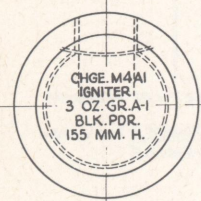


NOTE:- BASIC DIMENSIONS OF DETAILED PARTS ARE CALCULATED TO GIVE AN ASSEMBLED CHARGE OF MAXIMUM DIMENSIONS BUT MAY BE RE-ESTABLISHED TO GIVE AN ASSEMBLED CHARGE OF DESIRED DIMENSIONS. ESTABLISHED BASIC DETAILED DIMENSIONS MAY VARY $\pm \frac{1}{8}$ INCH

NOTICE: THIS DRAWING SHALL NOT BE USED NOR REPRODUCED IN ANY MANNER OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF THE UNITED STATES GOVERNMENT.

SCALE, INCHES, $\frac{1}{2}$

CHARGE, PROPELLING, M3 FOR 135 MM. HOW.MI. DETAILS.			
SEPT. 15, 1941		CLASS DIVISION DRAWING FILE	
REVISONS		71	9 179
1	11-19-41		
2	10-14-43		
3	3-19-45		
4	1-24-49		
		D'TSWAN W.M.R.	TRACER J.F.H.
		ENG. IN CHG. W.M.	
		CHECKER C.C.C.	CHECKER CHIEF D'TSWAN M.T.
		SUBMITTED: <i>[Signature]</i> SPLT, ORC. DEPT. U.S.A.	
DRG. PERTAINS TO		EXAMINED: <i>[Signature]</i> ORD. DEPT. U.S.A.	
71-9-177		APPROVED: <i>[Signature]</i> LT. COLORD. DEPT. U.S.A.	
		PICATINNY ARSENAL: U.S.A.	



ASSEMBLY 71-9-180 A 3
LARGE CHARGE NUMBERS ON INCREMENT CHARGE ASSEMBLIES
MUST BE ON TOP WHEN ASSEMBLED.
NOTE:- ONE IGNITER PROTECTOR CAP MUST BE PLACED OVER
IGNITER END OF CHARGE WHEN PACKED FOR SHIPMENT, AND
MUST BE REMOVED BEFORE FIRING.

LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER
1	ASSEMBLY	71-9-180
2	DETAILS	71-9-181
3	DETAILS	71-9-182
4	CARTRIDGE STORAGE CASE, M13	76-5-85A
5	PACKING & MARKING OF STORAGE CASE	20-4-422
6	PACKING BOX FOR STORAGE CASE	76-1-612
7	MARKING DIAGRAM FOR PACKING BOX	20-4-427
8	IGNITER PROTECTOR CAP (d)	71-9-34
9	IGNITER PROTECTOR CAP (d)	71-9-155
10		

(k) - ALTERNATIVE:-
CONTAINER, FIBER, 155MM., M69AI ____ DRG. 76-1-603AE
CONTAINER, PACKING & MARKING ____ DRG. 75-14-324
BUNDLE, PACKING & MARKING ____ DRG. 20-4-285

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC
NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A
LETTER IS AFFIXED TO ITS BASIC NUMBER.
SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS
AND NOT LISTED HEREON, SHALL NOT APPLY.

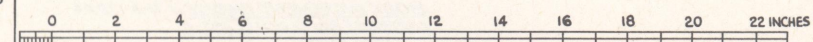
LIST OF PARTS

LINE NO.	NAME OF PART	NUMBER REQUIRED PER COMPONENT	PIECE-MARK	SIZE OR FORM	MATERIAL	GRADE	SPEC. NUMBER	APPROX. UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF RAW STOCK PER 1000 ASSEMBLIES	REMARKS
1	ASSEMBLY		71-9-180 A				50-63-1	13.91		
2	BASE CHARGE 3 AND IGNITER ASSEMBLY		71-9-181 A					3.93		
3	INCREMENT CHARGE 4 ASSEMBLY		71-9-181 D					1.34		
4	INCREMENT CHARGE 5 ASSEMBLY		71-9-181 E					2.03		
5	INCREMENT CHARGE 6 ASSEMBLY		71-9-181 F					3.08		
6	INCREMENT CHARGE 7 ASSEMBLY		71-9-181 G					3.53		
7										
8	BODY, BASE CHARGE 3	1	71-9-182 D	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.030	112 (f)	(a)(e)
9	BODY, INCREMENT CHARGE 4	1	71-9-182 G	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.013	49 (f)	(a)(e)
10	BODY, INCREMENT CHARGE 5	1	71-9-182 R	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.016	60 (f)	(a)(e)
11	BODY, INCREMENT CHARGE 6	1	71-9-182 L	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.025	93 (f)	(a)(e)
12	BODY, INCREMENT CHARGE 7	1	71-9-182 N	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.028	105 (f)	(a)(e)
13	TOP BASE CHARGE 3 AND									
14	BOTTOM, INCREMENT CHARGES 4, 5, 6 AND 7	5	71-9-182 E	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.007	28 (f)	(a)(e)
15	BOTTOM, IGNITER, INNER	1	71-9-182 B	BOLT	CARTRIDGE IGNITER CLOTH	C	50-11-39	.010	28 (f)	
16	BOTTOM, IGNITER, OUTER	1	71-9-182 A	BOLT	CARTRIDGE IGNITER CLOTH	C	50-11-39	.010	28 (f)	
17	CHARGE, BASE, 3	1	71-9-181 C		SMOKELESS POWDER		50-12-3	3.625	3625.	(b)
18	CHARGE, IGNITER	1	71-9-181 B		ARMY BLACK POWDER	A-1	50-14-1	.188	188.	
19	CHARGE, INCREMENT CHARGE 4	1	71-9-181 H		SMOKELESS POWDER		50-12-3	1.312	1312.	(b)
20	CHARGE, INCREMENT CHARGE 5	1	71-9-181 K		SMOKELESS POWDER		50-12-3	2.000	2000.	(b)
21	CHARGE, INCREMENT CHARGE 6	1	71-9-181 L		SMOKELESS POWDER		50-12-3	3.038	3038.	(b)
22	CHARGE, INCREMENT CHARGE 7	1	71-9-181 M		SMOKELESS POWDER		50-12-3	3.488	3488.	(b)
23										
24	STRAP, TYING	4	71-9-182 P	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.014	251 (f)	(a)(e)
25										
26	TOP, INCREMENT CHARGE 4	1	71-9-182 F	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.007	28 (f)	(a)(e)
27	TOP, INCREMENT CHARGE 5	1	71-9-182 H	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.007	28 (f)	(a)(e)
28	TOP, INCREMENT CHARGE 6	1	71-9-182 K	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.007	28 (f)	(a)(e)
29	TOP, INCREMENT CHARGE 7	1	71-9-182 M	BOLT	CARTRIDGE BAG CLOTH	E	50-11-39	.007	28 (f)	(a)(e)
30										
31					DYE, SCARLET		27-2			
32					INK, MARKING, INDELIBLE	TYPE B	TT-1-542			(c)
33					THREAD, SILK SEWING	B	7-7			(h)
34										

- (a) IF SUPPLY OF GRADE "E" CLOTH IS NOT AVAILABLE, GRADE "D" MAY BE USED.
(b) APPROXIMATE; EXACT WEIGHT WILL BE FURNISHED BY CONTRACTING OFFICER.
(c) ALTERNATIVE:- INK, MARKING, PRINTER'S, BLACK, COMMERCIAL.
(d) IGNITER PROTECTOR CAP TO BE SUPPLIED IN ACCORDANCE WITH REQUIREMENTS, AS SET FORTH ON DRG. 71-9-34 OR 71-9-155.
(e) SUBSTITUTE (WHEN AUTHORIZED BY THE CHIEF OF ORDNANCE):- CLOTH, CARTRIDGE, COTTON, GRADE "A", SPEC. 50-11-65.
(f) SQUARE YARDS

- (h) SUBSTITUTE (WHEN AUTHORIZED BY THE CHIEF OF ORDNANCE):- THREAD, COTTON, 3 PLY, NO. 20, SPEC. V-T- 276.

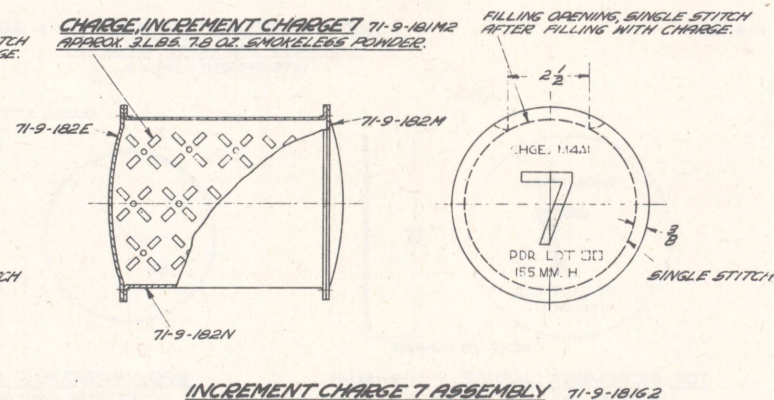
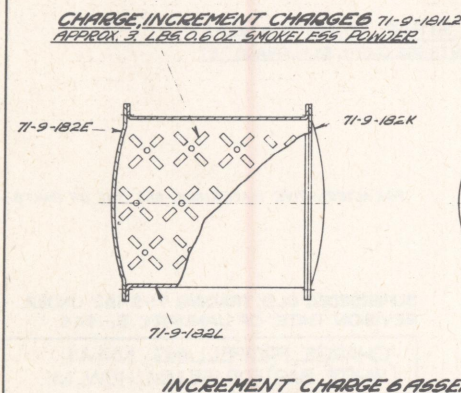
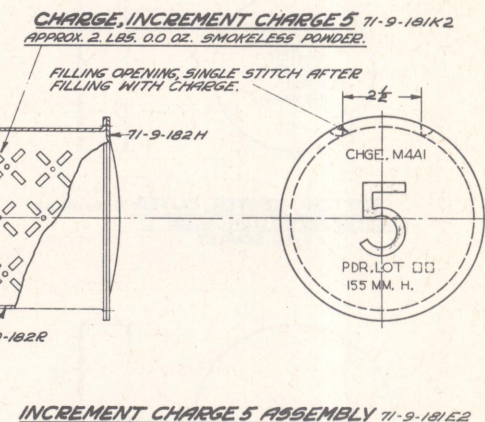
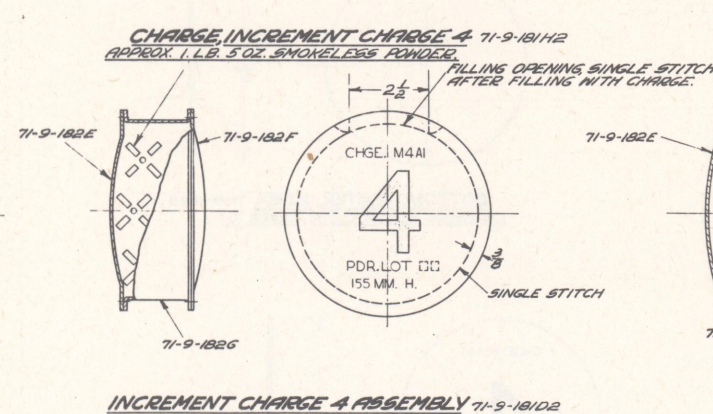
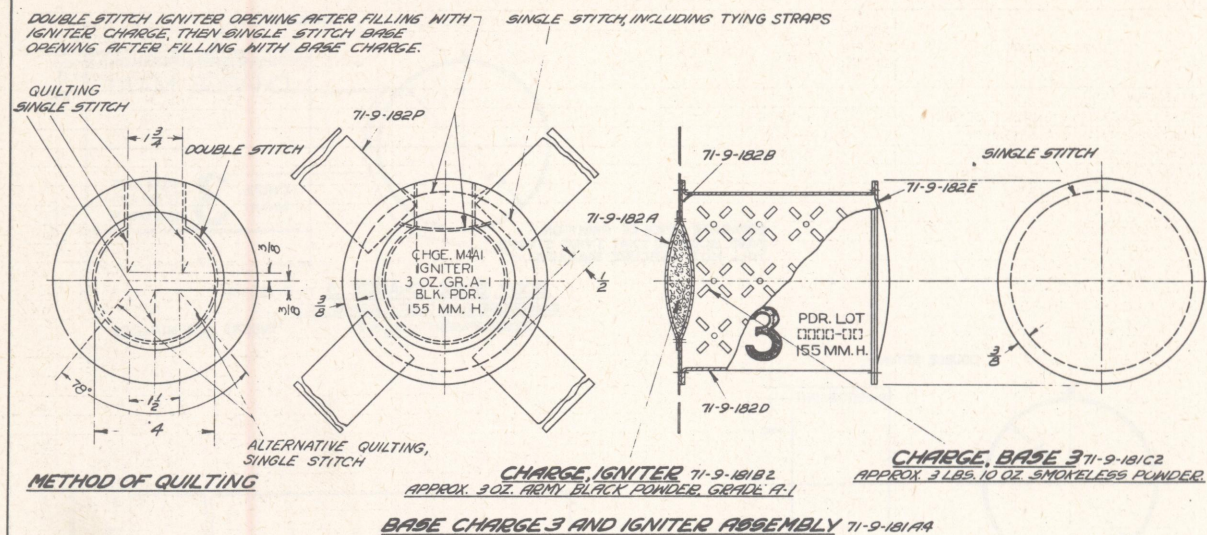
LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC. FOR	50-0-1	DRG. 71-9-180
2			
3	BAGS, IGNITERS & IGNITER PROTECTOR CAPS FOR PROPELLING CHARGES, MFR. OF	50-65-1	DRG. 71-9-180
4			
5	CHARGES, PROPELLING, FOR SEPARATE LOADING AMMUNITION	50-63-1	DRG. 71-9-180
6	CLOTH, CARTRIDGE (SILK, WOOL OR MOHAIR)	50-11-39	DRG. 71-9-182
7	CLOTH, CARTRIDGE, COTTON	50-11-65	DRG. 71-9-182
8	DYE, SCARLET, FOR IGNITER PADS	27-2	DRG. 71-9-182
9	INK; MARKING, INDELIBLE (FOR) FABRICS	TT-1-542	DRG. 71-9-181
10	POWDER, BLACK, ARMY	50-14-1	DRG. 71-9-181
11	POWDER, CANNON, SMOKELESS, FNH AND N.H.	50-12-3	DRG. 71-9-181
12			
13	THREAD, COTTON	V-T- 276	DRG. 71-9-181
14	THREAD, SILK SEWING	7-7	DRG. 71-9-181
15			



SUPERSEDES OLD TRACING 71-9-180 UNDER
REVISION DATE OF JANUARY 5, 1944

**CHARGE, PROPELLING, M4AI (WHITE BAG)
FOR 155 MM. HOW. MI.
ASSEMBLY**

SEPTEMBER 15, 1941	CLASS	DIVISION	DRAWING	FILE
REVISIONS	71	9	180	
1 11-19-41				
2 1-5-44				
3 3-9-45				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED DECIMAL ± FRACTIONAL ± ANGULAR ±				
DFTSMAN W.H.A. TRACER D.C.S. 925 ENGINEER				
CHECKER 0.5 PRINCIPAL ENGINEER				
SUBMITTED: <i>Amptell</i>				
EXAMINED: <i>W.C. Roberts</i>				
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:				
LT. COL., ORD. DEPT. U.S.A.				
COL., ORD. DEPT. U.S.A.				
ORDNANCE DEPT., U.S.A.				



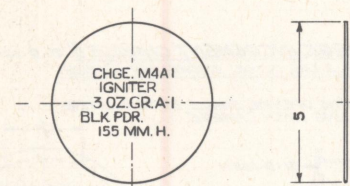
NOTES:-
ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING THREAD, GRADE B, 8 TO 12 STITCHES PER INCH.
DIMENSIONS MAY VARY $\pm \frac{1}{8}$ FROM THOSE SHOWN.

SCALE, INCHES $\frac{1}{2}$

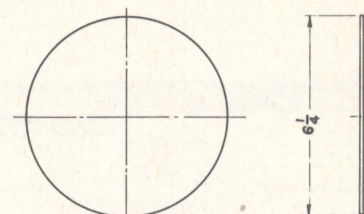
SUPERSEDES OLD TRACING 71-9-181 UNDER
REVISION DATE OF JANUARY 5, 1944

**CHARGE, PROPELLING, M4AI (WHITE BAG)
FOR 155 MM. HOW. M1
DETAILS**

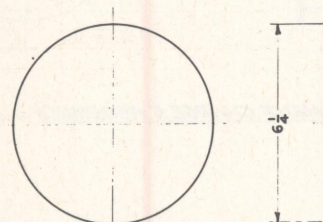
SEPTEMBER 15, 1941	CLASS	DIVISION	DRAWING	FILE
REVISIONS	71	9	181	
1 11-19-41				
2 1-5-44				
3 3-19-45				
4 5-21-45				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED				
DECIMAL \pm				
FRACTIONAL \pm				
ANGULAR \pm				
DRG. PERTAINS TO				
SUBMITTED				
EXAMINED				
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE				
71-9-180	D			ORDNANCE DEPT., U. S. A.



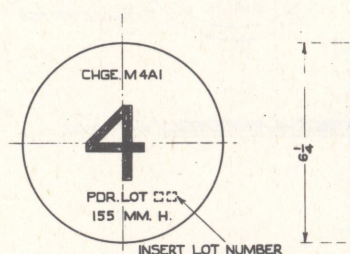
BOTTOM, IGNITER, OUTER 71-9-182 A3
CARTRIDGE IGNITER CLOTH, GRADE "C"
DYED SCARLET



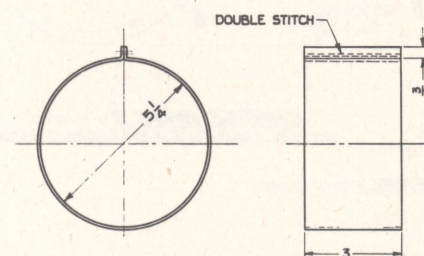
BOTTOM, IGNITER, INNER 71-9-182 B
CARTRIDGE IGNITER CLOTH, GRADE "C"



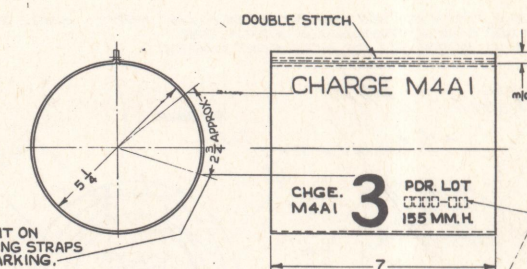
**TOP, BASE CHARGE 3 AND
BOTTOM, INCREMENT CHARGES 4, 5, 6 AND 7** 71-9-182 E3
CARTRIDGE BAG CLOTH, GRADE "E"



TOP, INCREMENT CHARGE 4 71-9-182 F3
CARTRIDGE BAG CLOTH, GRADE "E"

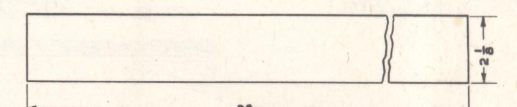


BODY, INCREMENT CHARGE 4 71-9-182 G3
CARTRIDGE BAG CLOTH, GRADE "E"
DEVELOPMENT = $17\frac{1}{4} \times 3$

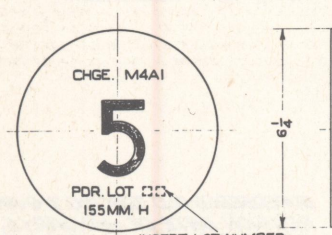


BODY, BASE CHARGE 3 71-9-182 D3
CARTRIDGE BAG CLOTH, GRADE "E"
DEVELOPMENT = $17\frac{1}{4} \times 7$

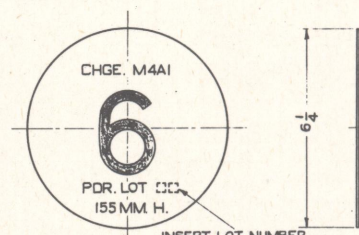
INSERT LOT NUMBER



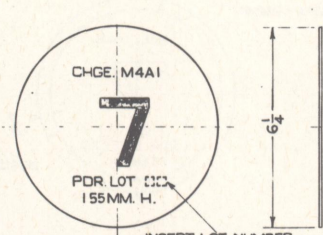
STRAP, TYING 71-9-182 P3
CARTRIDGE CLOTH, SILK, GRADE "E"



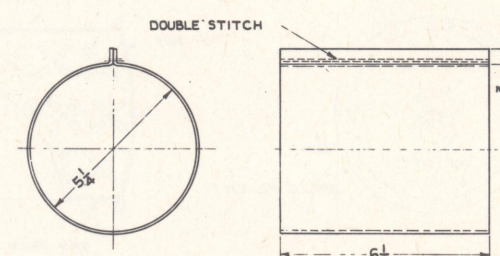
TOP, INCREMENT CHARGE 5 71-9-182 H3
CARTRIDGE BAG CLOTH, GRADE "E"



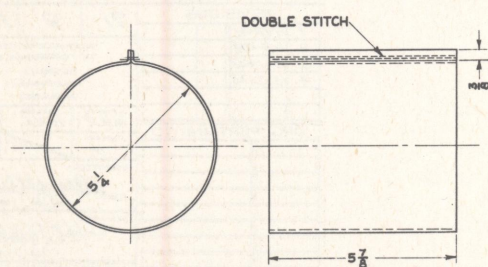
TOP, INCREMENT CHARGE 6 71-9-182 K3
CARTRIDGE BAG CLOTH, GRADE "E"



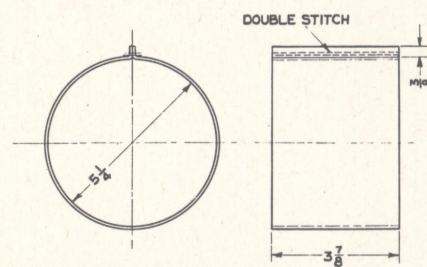
TOP, INCREMENT CHARGE 7 71-9-182 M3
CARTRIDGE BAG CLOTH, GRADE "E"



BODY, INCREMENT CHARGE 7 71-9-182 N3
CARTRIDGE BAG CLOTH, GRADE "E"
DEVELOPMENT $17\frac{1}{4} \times 6\frac{1}{2}$



BODY, INCREMENT CHARGE 6 71-9-182 L3
CARTRIDGE BAG CLOTH, GRADE "E"
DEVELOPMENT $17\frac{1}{4} \times 5\frac{7}{8}$



BODY, INCREMENT CHARGE 5 71-9-182 R3
CARTRIDGE BAG CLOTH, GRADE "E"
DEVELOPMENT $17\frac{1}{4} \times 3\frac{7}{8}$

NOTES:-
BASIC DIMENSIONS OF DETAILED PARTS ARE CALCULATED TO GIVE AN ASSEMBLED CHARGE OF MAXIMUM DIMENSIONS BUT MAY BE RE-ESTABLISHED TO GIVE AN ASSEMBLED CHARGE OF DESIRED DIMENSIONS. ESTABLISHED BASIC DETAILED DIMENSIONS MAY VARY $\pm\frac{1}{16}$ INCH.
ALL MARKING ON CARTRIDGE BAG (EXCEPT CHARGE NUMBERS AND MARKING ON BASE BODY) TO BE NOT LESS THAN $\frac{1}{16}$ INCH LETTERS AND FIGURES.
THE PHRASE "CHARGE M4A1" ON BASE BODY TO BE NOT LESS THAN $\frac{3}{16}$ INCH HIGH.
CHARGE NUMBER ON TOP OF BAG AND ON BASE BODY TO BE NOT LESS THAN $2\frac{1}{16}$ INCHES HIGH.
MARK WITH INDELIBLE MARKING INK, TYPE "B".
ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING THREAD, GRADE "B", 8 TO 12 STITCHES PER INCH.

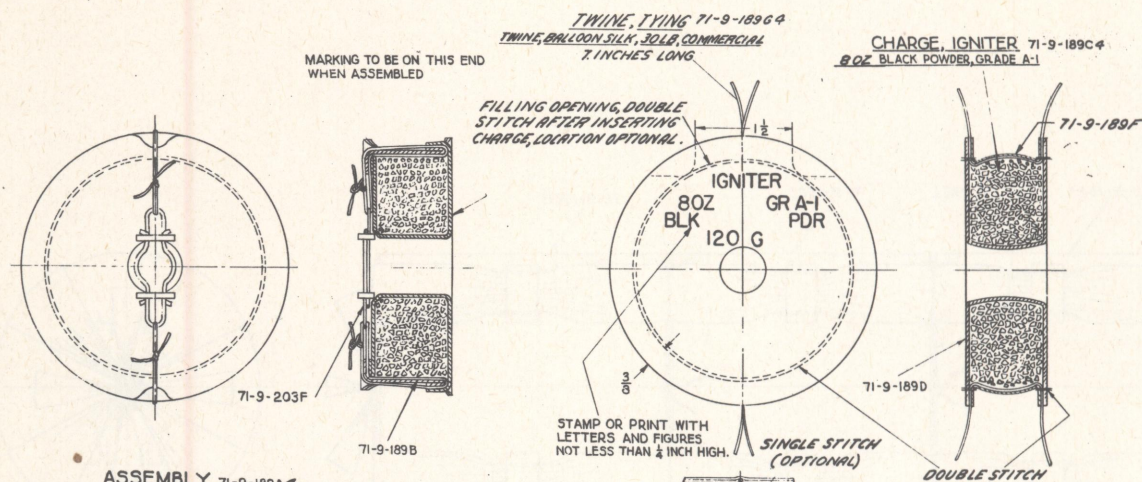
SCALE, INCHES, $\frac{1}{2}$

FOR ALTERNATIVE MATERIALS, SEE LIST OF PARTS.

SUPERSEDES OLD TRACING 71-9-182 UNDER
REVISION DATE OF JANUARY 5, 1944

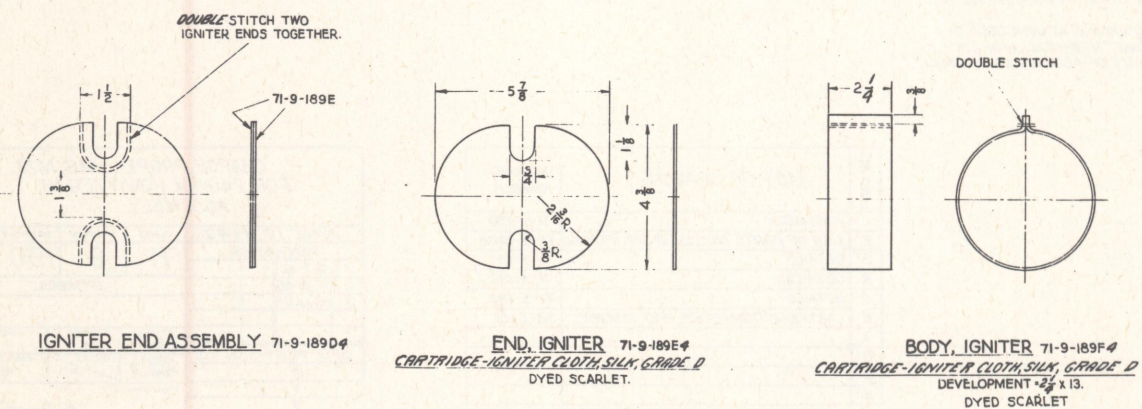
SEPTEMBER 15, 1941		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	9	182	
1	11-19-41				
2	1-5-44				
3	3-19-45				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED					
DECIMAL \pm					
FRACTIONAL \pm					
ANGULAR \pm					
DRG. PERTAINS TO					
SUBMITTED					
EXAMINED					
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE					
71-9-180					
D		ORDNANCE DEPT., U.S.A.			

D 5780



ASSEMBLY 71-9-189A
THREAD BOTTOM TWINE THROUGH RETAINER EYE, BRING TWO TWINE ENDS TOGETHER AND TIE IGNITER IN A SNUG MANNER WITH THREE HARD KNOTS.

IGNITER ASSEMBLY 71-9-189A



IGNITER END ASSEMBLY 71-9-189D

END, IGNITER 71-9-189E
CARTRIDGE-IGNITER CLOTH, SILK, GRADE D
DYED SCARLET.

BODY, IGNITER 71-9-189F
CARTRIDGE-IGNITER CLOTH, SILK, GRADE D
DEVELOPMENT 2 1/2 X 13.
DYED SCARLET

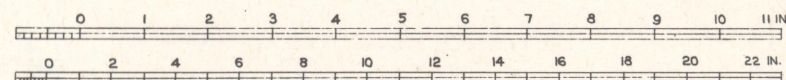
LINE NO.	NAME OF PART	NUMBER REQ. PER COMPONENT	PIECE-MARK	LIST OF PARTS					REMARKS
				SIZE OR FORM	MATERIAL	GRADE	SPEC. NUMBER	APPROXIMATE WEIGHT (POUNDS)	
1	ASSEMBLY		71-9-189A				50-65-1	.53	
2	IGNITER END ASSEMBLY		71-9-189D					.51	
3	IGNITER ASSEMBLY		71-9-189B					.02	
4	RETAINER, M3A1	1	71-9-203F						
5									
6	BODY, IGNITER	1	71-9-189F	BOLT	CARTRIDGE-IGNITER CLOTH, SILK	"D"	50-11-39		(d)
7									
8	CHARGE, IGNITER	1	71-9-189C		BLACK POWDER	A-1	JAN-P-223	.50	
9									
10	END, IGNITER	2	71-9-189E	BOLT	CARTRIDGE-IGNITER CLOTH, SILK	"D"	50-11-39		(d)
11									
12					DYE, SCARLET		27-2		
13					INK, MARKING, INDELIBLE	TYPE "B"	TT-1-542		(a)
14					THREAD, SILK SEWING	CLASS "B"	7-7		(b)
15	TWINE, TYING	2	71-9-189G	CONE	TWINE, BALLOON SILK		30 LB. COMMERCIAL		
16									

(a)-ALTERNATIVE:- PRINTER'S INK, BLACK, COMMERCIAL.
(b)-SUBSTITUTE MATERIAL (WHEN AUTHORIZED BY CHIEF OF ORDNANCE):- THREAD; COTTON, 3 PLY NO. 20 OR 50, SPEC. V-T-276.
(c)-SUBSTITUTE MATERIAL (WHEN AUTHORIZED BY CHIEF OF ORDNANCE):- COTTON CARTRIDGE CLOTH, GRADE A, SPEC. 50-11-65.

LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM., GENERAL SPEC. FOR	50-0-1	DRG. 71-9-189
2			
3	BAGS, IGNITERS AND IGNITER PROTECTOR CAPS, FOR PROPELLING CHG'S MFG. OF	50-65-1	DRG. 71-9-189
4			
5	CARTRIDGE CLOTH (SILK, WOOL, OR MOHAI)	50-11-39	DRG. 71-9-189
6	CLOTH, COTTON, CARTRIDGE	50-11-65	DRG. 71-9-189
7	DYE, SCARLET, FOR IGNITER PADS	27-2	DRG. 71-9-189
8			
9	INK, MARKING, INDELIBLE (FOR) FABRICS	TT-1-542	DRG. 71-9-189
10			
11	POWDER, BLACK	JAN-P-223	DRG. 71-9-189
12			
13	TEXTILES; GENERAL SPECIFICATIONS, TEST METHODS	CCC-T-191	50-11-65
14	THREAD, SILK, SEWING (FOR POWDER BAGS)	7-7	DRG. 71-9-189
15	THREAD; COTTON	V-T-276	DRG. 71-9-189

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, DO NOT APPLY.

REMOVE ALL BURRS.

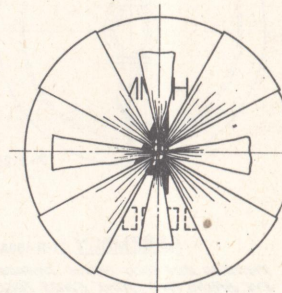
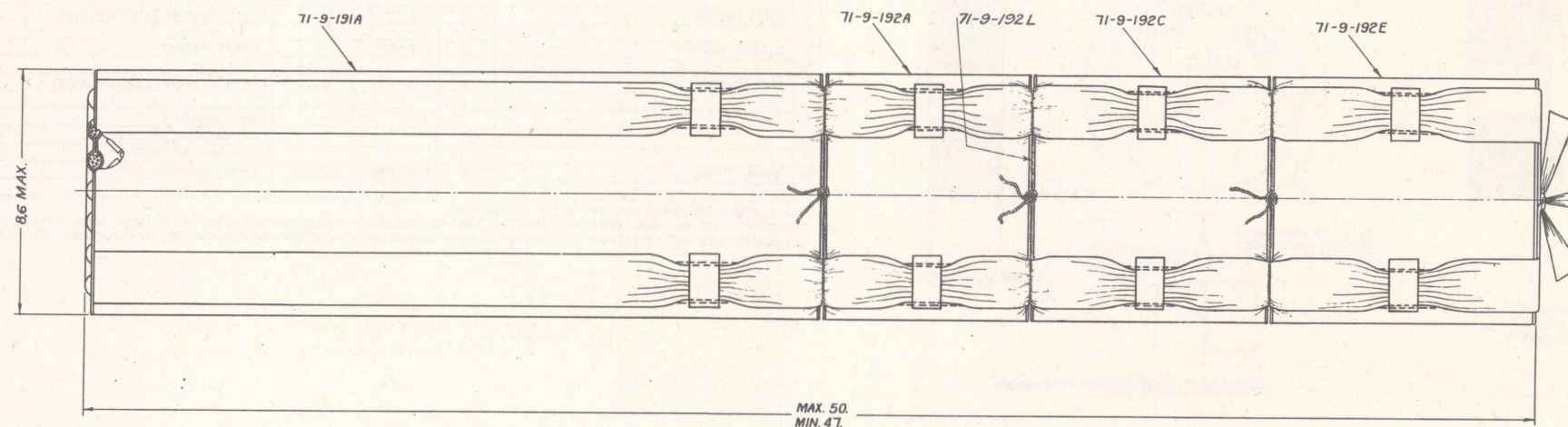
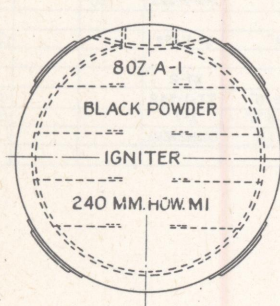


NOTES:-
ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING THREAD, CLASS "B", 8 TO 12 STITCHES PER INCH.
DETAIL SEWING DIMENSIONS MAY VARY $\pm \frac{1}{8}$ INCH, WHILE CLOTH SHALL BE CUT TO $\pm \frac{1}{8}$ INCH OF SIZE SPECIFIED.
MARK WITH INDELIBLE MARKING INK, TYPE B. (c)
(c) ALTERNATIVE:- MARK WITH BLACK PRINTER'S INK, COMMERCIAL.

SUPERSEDES OLD TRACING 71-9-189 UNDER REVISION DATE OF NOVEMBER 24, 1943.

IGNITER, FOR PROPELLING CHARGE FOR 120-MM GUN, MI. ASSEMBLY AND DETAILS.

MAY 22, 1942		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	9	189	
1	7-16-43				
2	11-24-43				
3	3-26-45				
4	4-15-47				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED					
DECIMAL \pm					
FRACTIONAL \pm					
ANGULAR \pm					
DRG. PERTAINS TO					
71-9-161					
SUBMITTED BY		W.H.A. ENGINEER			
CHECKED BY		W.H.A. ENGINEER			
EXAMINED BY		B.E.H. ENGINEER			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE		S.M. Hitting COL., ORD. DEPT. U.S.A.			
D		ORDNANCE DEPT., U.S.A.			



ASSEMBLY 71-9-190A3

TOTAL CHARGE TO BE APPROX. 78 LBS. 8 OZS. OF PROPELLENT POWDER, TYPE I, AND 8 OZS. BLACK POWDER, GRADE A-1, IN IGNITER.

NOTE: ENCIRCLE ASSEMBLED CHARGE AT JUNCTION OF CHARGE SECTIONS WITH CORD, 71-9-192L, AND TIE TIGHTLY TO INCREASE RIGIDITY OF ASSEMBLED CHARGE.

LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER
1	ASSEMBLY	71-9-190
2	LIST OF PARTS AND LIST OF SPECIFICATIONS	71-9-190A
3	DETAILS	71-9-191
4	DETAILS	71-9-192
5	DETAILS	71-9-193
6	CARTRIDGE STORAGE CASE, M10, ASSEMBLY	76-5-81
7		
8		
9		
10		

0 2 4 6 8 10 12 14 16 18 20 22 INCHES

CHARGE, PROPELLING, M23, FOR 240-MM HOWITZER, M1, ASSEMBLY.				
JUNE 12, 1942		CLASS	DIVISION	DRAWING
REVISIONS		71	9	190
1	8-7-42			
2	8-15-45			
3	12-25-45			
SYMBOL				
DESIGNED	TRACED	ENGINEER		
36.2	36.2	36.2		
DRG. PERTAINS TO				
SUBMITTED				
EXAMINED				
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE				
ORDNANCE DEPT. U.S.A.				

LIST OF PARTS									
LINE NO	NAME OF PART	NUMBER REQUIRED PER COMPONENT	PIECE-MARK	MATERIAL			SPEC. NUMBER	APPROXIMATE UNIT WEIGHT (POUNDS)	REMARKS
				SIZE OR FORM	KIND	GRADE			
1	ASSEMBLY		71-9-190A					80.	
2	BASE BAG ASSEMBLY		71-9-191D					554	
3	BASE LOADING ASSEMBLY		71-9-191A					41.929	
4	INCREMENT CHARGE 2 ASSEMBLY		71-9-192A					11.254	
5	INCREMENT CHARGE 3 ASSEMBLY		71-9-192C					12.889	
6	INCREMENT CHARGE 4 ASSEMBLY		71-9-192E					13.899	
7	IGNITER PAD ASSEMBLY		71-9-193A					.054	
8									
9									
10	BODY, BASE	1	71-9-191E	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.259	(c)
11	BODY, INCREMENT CHARGE 2	1	71-9-192G	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.079	(c)
12	BODY, INCREMENT CHARGE 3	1	71-9-192H	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.089	(c)
13	BODY, INCREMENT CHARGE 4	1	71-9-192K	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.099	(c)
14	BOTTOM, IGNITER	1	71-9-193B	BOLT	CARTRIDGE BAG CLOTH	CLASS "C"	JAN-C-539	.027	(c)
15	BOTTOM, INCREMENT CHARGE 2	1	71-9-193E	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
16	BOTTOM, INCREMENT CHARGE 3	1	71-9-193F	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
17	BOTTOM, INCREMENT CHARGE 4	1	71-9-193G	BOLT	CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
18									
19									
20	CHARGE, BASE	1	71-9-191C		PROPELLENT POWDER	TYPE I	JAN-P-270	40.875	
21	CHARGE, INCREMENT, CHARGE 2	1	71-9-192G		PROPELLENT POWDER	TYPE I	JAN-P-270	11.125	
22	CHARGE, INCREMENT, CHARGE 3	1	71-9-192D		PROPELLENT POWDER	TYPE I	JAN-P-270	12.75	
23	CHARGE, INCREMENT, CHARGE 4	1	71-9-192F		PROPELLENT POWDER	TYPE I	JAN-P-270	13.75	
24	CHARGE, IGNITER	1	71-9-191B		BLACK POWDER	"A-1"	JAN-P-223	.5	
25	CORD	3	71-9-192L		SILK LACING CORD	TYPE B, CL C	JAN-C-453		(c)
26									
27	LOOP	16	71-9-191F		CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.002	(c)
28									
29	STRAP, TYING	4	71-9-191G		CARTRIDGE BAG CLOTH	CLASS "D"	JAN-C-539	.051	(c)
30									
31	TOP, BASE CHARGE 1	1	71-9-193D		CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
32	TOP, IGNITER	1	71-9-193C		CARTRIDGE BAG CLOTH	CLASS "C"	JAN-C-539	.027	(c)
33	TOP, INCREMENT CHARGE 2	1	71-9-193H		CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
34	TOP, INCREMENT CHARGE 3	1	71-9-193K		CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
35	TOP, INCREMENT CHARGE 4	1	71-9-193L		CARTRIDGE BAG CLOTH	CLASS "B"	JAN-C-539	.021	(c)
36									
37									
38					DYE	CLASS 2	JAN-D-511		
39					INK, MARKING, INDELIBLE	"B"	TT-I-542		(a)
40					THREAD, SEWING, SILK	"A"	7-7		
41									
42									

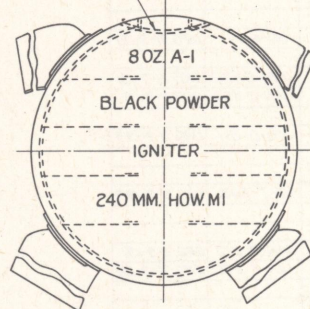
(a) ALTERNATIVE MATERIAL-BLACK PRINTER'S INK, COMMERCIAL (b)
 ALTERNATIVE MATERIALS ARE INTENDED TO BE USED ONLY
 WHEN PRESCRIBED MATERIALS ARE NOT AVAILABLE.
 SUBSTITUTE MATERIAL (WHEN AUTHORIZED BY THE CHIEF OF ORD)
 CARTRIDGE CLOTH, COTTON, GRADE "D", SPEC 50-11-65.
 CORD, BRAIDED COTTON, SPEC 50-11-52.

LINE NO	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC. FOR	50-0-1	DRG 71-9-190
2			
3			
4			
5	CHARGES, PROPELLING, FOR SEPARATE LOADING AMM.	50-63-1	DRG 71-9-191
6			
7	CLOTH, SILK, CARTRIDGE-BAG	JAN-C-539	DRG 71-9-191
8	CORD, LACING, SILK	JAN-C-453	DRG 71-9-192
9			
10	DYES, GREEN AND SCARLET	JAN-D-511	DRG 71-9-193
11			
12			
13	INK, MARKING, INDELIBLE (FOR) FABRICS	TT-I-542	DRG 71-9-193
14			
15			
16	POWDER, BLACK	JAN-P-223	DRG 71-9-191
17	POWDER, PROPELLENT, CANNON	JAN-P-270	DRG 71-9-191
18			
19			
20	THREAD, SILK, SEWING	7-7	DRG 71-9-191
21			
22			
23			
24			
25			
26			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS
 REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER.
 SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON SHALL NOT APPLY.

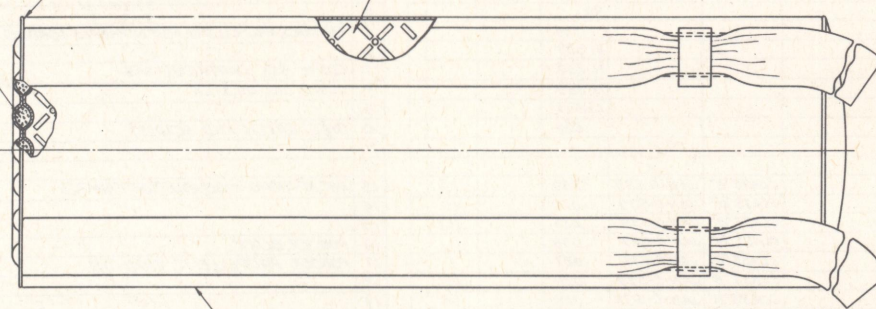
CHARGE, PROPELLING, M23, FOR 240-MM HOWITZER, M1. LIST OF PARTS AND LIST OF SPECIFICATIONS			
JUNE 12, 1942	CLASS	DIVISION	DRAWING
REVISIONS	71	9	190A
1 8-7-42			
2 8-15-45			
3 12-28-48			
SYMBOL			
DRG. PERTAINS TO			
71-9-190	CHECKER	TRACER	EN INCH
	6.6.7	R.M.D.	M.T.
SUBMITTED:			
EXAMINED:			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:			
D			
ORDNANCE DEPT. U. S. A.			

FILLER OPENING, DOUBLE
STITCH AFTER FILLING
WITH IGNITER CHARGE.



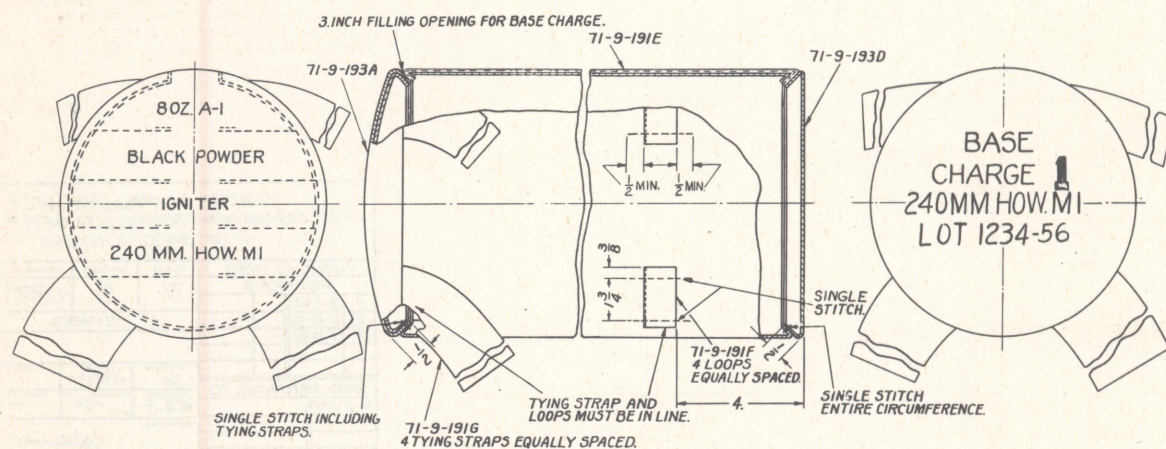
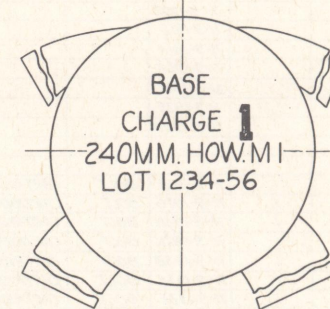
CHARGE, IGNITER 71-9-191B3
APPROX 8 OZS. BLACK POWDER, GRADE "A-1"

FILLER OPENING, SINGLE STITCH
AFTER INSERTING BASE CHARGE.

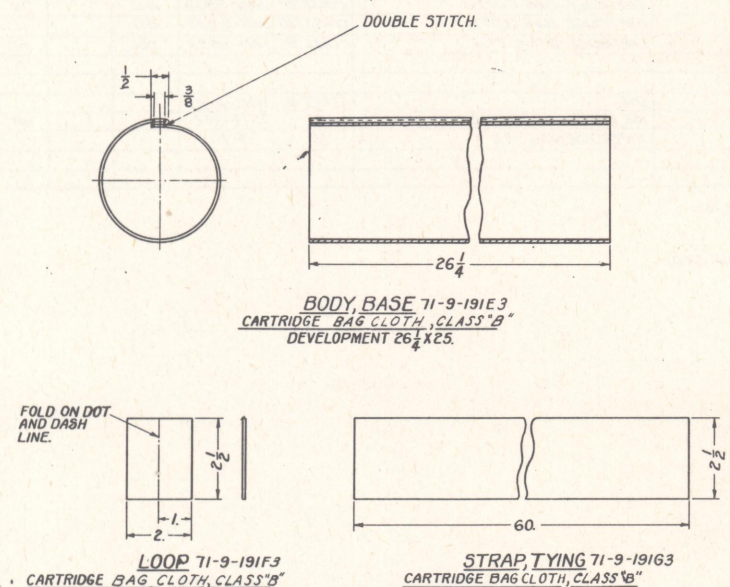


71-9-191D

BASE LOADING ASSEMBLY 71-9-191A3
(WITH SAMPLE MARKING)



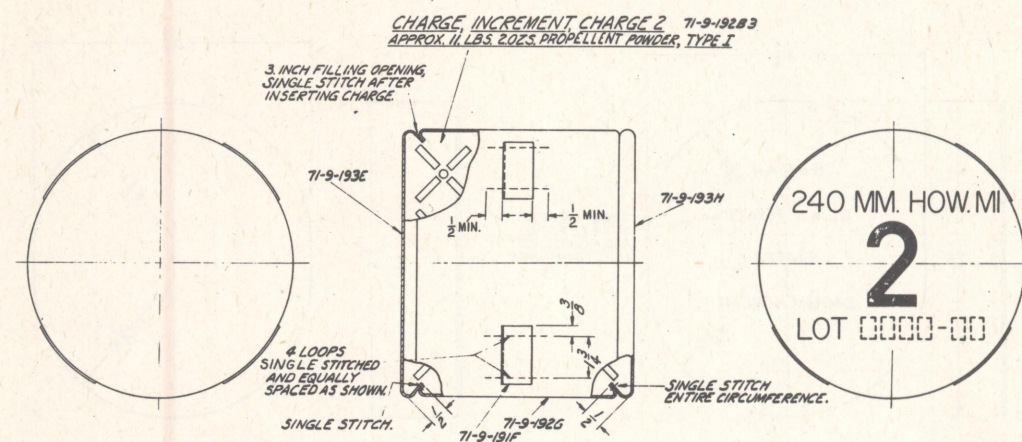
BASE BAG ASSEMBLY 71-9-191D3



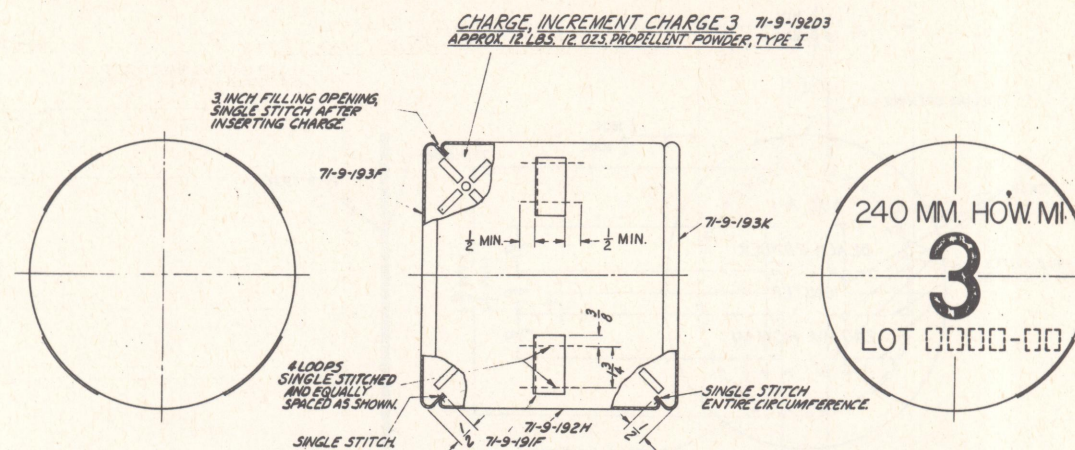
NOTES:- ALL SEAMS MACHINE LOCK STITCHED WITH SILK
SEWING THREAD, GRADE "A," 8 TO 12 STITCHES
PER INCH.
BASIC DIMENSIONS OF DETAILED PARTS ARE
CALCULATED TO GIVE AN ASSEMBLED CHARGE OF
MAXIMUM DIMENSIONS, BUT MAY BE RE-ESTABLISHED
TO GIVE AN ASSEMBLED CHARGE OF DESIRED
DIMENSIONS. ESTABLISHED BASIC DETAILED DIMENSIONS
MAY VARY BY $\pm \frac{1}{8}$ INCH.

JUNE 12, 1942				CLASS	DIVISION	DRAWING	FILE
REVISIONS				71	9	191	
1	8-7-42			SYMBOL			
2	8-15-45						
3	12-28-48						
DRG. PERTAINS TO				OFFICER	TRACER	ENGINEER	
71-9-191				9.6.7.	G.O.	CHIEF OFFICER	M.T.
SUBMITTED:				 COL., ORS. DEPT., U. S. A.			
EXAMINED:				 MAJOR, ORS. DEPT., U. S. A.			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:				 COL., ORS. DEPT., U. S. A.			
D				ORDNANCE DEPT. U. S. A.			

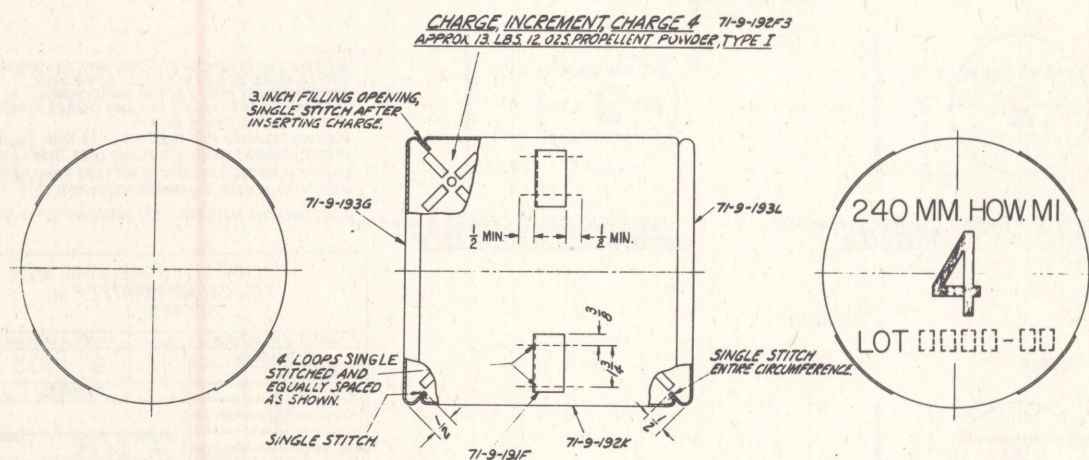
SCALE, INCHES, $\frac{1}{2}$, $\frac{1}{4}$



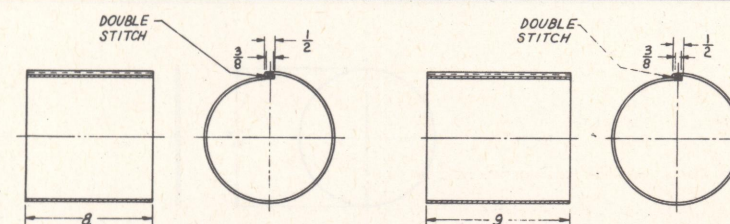
INCREMENT CHARGE 2 ASSEMBLY 71-9-192A2
(WITH SAMPLE MARKING)



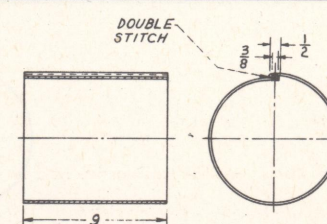
INCREMENT CHARGE 3 ASSEMBLY 71-9-192C2
(WITH SAMPLE MARKING)



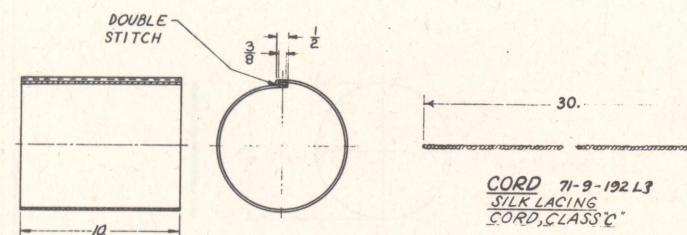
INCREMENT CHARGE 4 ASSEMBLY 71-9-192D2
(WITH SAMPLE MARKING)



BODY, INCREMENT CHARGE 2 71-9-19263
CARTRIDGE BAG CLOTH, CLASS "B"
DEVELOPMENT 8 X 25



BODY, INCREMENT CHARGE 3 71-9-192H3
CARTRIDGE BAG CLOTH, CLASS "B"
DEVELOPMENT 9 X 25



BODY, INCREMENT CHARGE 4 71-9-192K3
CARTRIDGE BAG CLOTH, CLASS "B"
DEVELOPMENT 10 X 25

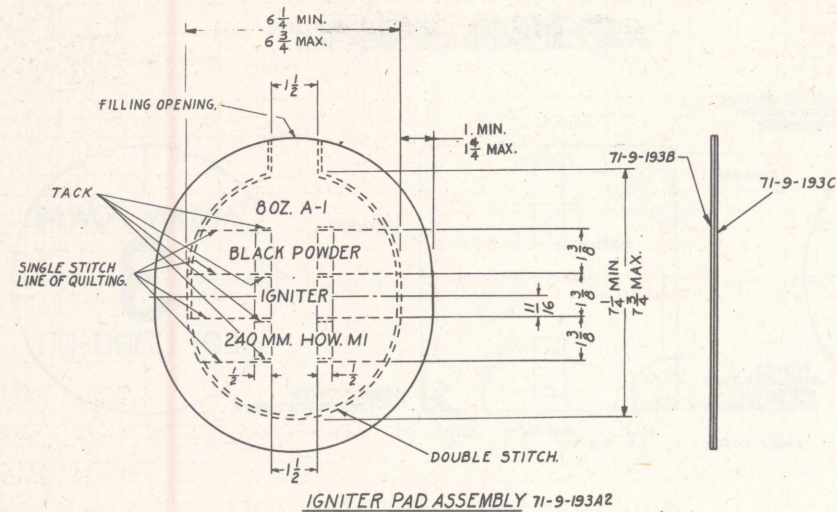
CORD 71-9-192 L3
SILK LACING
CORD, CLASS "C"

SCALE, INCHES 1/2, 1/4

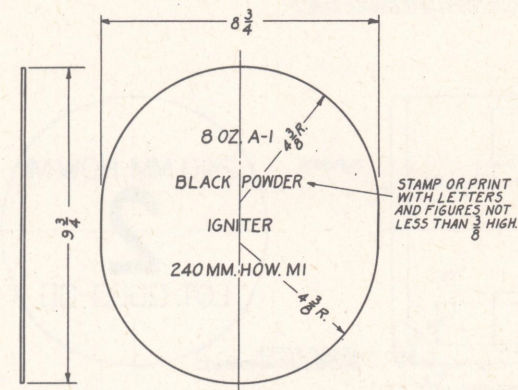
NOTES:-- ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING THREAD, GRADE "A," 8 TO 12 STITCHES PER INCH.
BASIC DIMENSIONS OF DETAILED PARTS ARE CALCULATED TO GIVE AN ASSEMBLED CHARGE OF MAXIMUM DIMENSIONS, BUT MAY BE RE-ESTABLISHED TO GIVE AN ASSEMBLED CHARGE OF DESIRED DIMENSIONS. ESTABLISHED BASIC DETAILED DIMENSIONS MAY VARY BY $\pm \frac{1}{8}$ INCH.

**CHARGE, PROPELLING, M23,
FOR 240-MM HOWITZER, MI.
DETAILS**

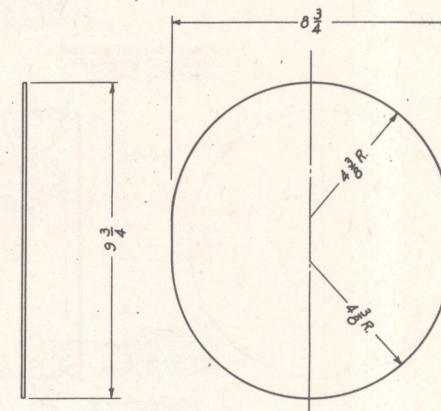
JUNE 12, 1942		CLASS	DIVISION	DRAWING
REVISIONS		71	9	192
1	8-7-42			
2	8-15-45			
3	12-28-48			
DRG. PERTAINS TO		SYMBOL		
71-9-192		DYSMAN	TRACER	ENGR.
		50.	H.P.F.	
		CHECKER	CHECKER	CHIEF DT.
		4.6.3.	6.0.	M.T.
SUBMITTED:		M. J. Roberts		
		COL., ORD. DEF.		
EXAMINED:		C. H. Roberts		
		MAJOR, ORD. DEF.		
APPROVED BY ORDER OF THE CHIEF OF		ORDNANCE		
		R. J. Roberts		
		COL., ORD. DEF.		
D		ORDNANCE DEPT. U. S.		



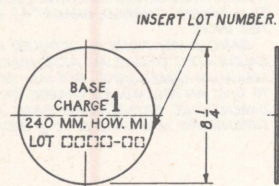
IGNITER PAD ASSEMBLY 71-9-193A2



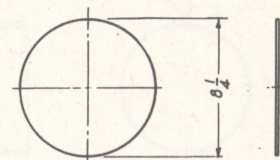
BOTTOM, IGNITER 71-9-193B2
CARTRIDGE BAG CLOTH, CLASS "C"
DYED SCARLET, (CLASS 2)



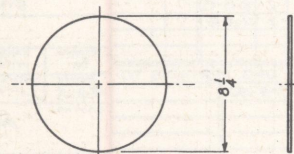
TOP, IGNITER 71-9-193C2
CARTRIDGE BAG CLOTH, CLASS "C"



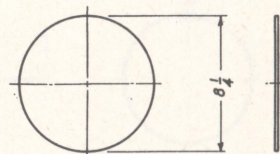
TOP, BASE CHARGE 1 71-9-193D2
CARTRIDGE BAG CLOTH, CLASS "B"



BOTTOM, INCREMENT CHARGE 2 71-9-193E2
CARTRIDGE BAG CLOTH, CLASS "B"

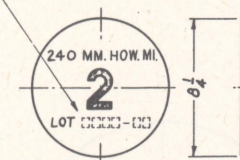


BOTTOM, INCREMENT CHARGE 3 71-9-193F2
CARTRIDGE BAG CLOTH, CLASS "B"



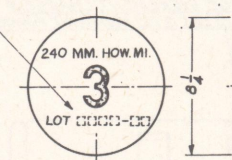
BOTTOM, INCREMENT CHARGE 4 71-9-193G2
CARTRIDGE BAG CLOTH, CLASS "B"

INSERT LOT NUMBER



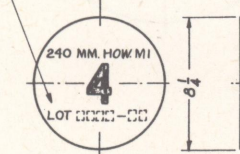
TOP, INCREMENT CHARGE 2 71-9-193H2
CARTRIDGE BAG CLOTH, CLASS "B"

INSERT LOT NUMBER



TOP, INCREMENT CHARGE 3 71-9-193K2
CARTRIDGE BAG CLOTH, CLASS "B"

INSERT LOT NUMBER



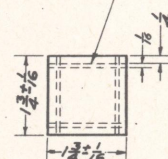
TOP, INCREMENT CHARGE 4 71-9-193L2
CARTRIDGE BAG CLOTH, CLASS "B"

NOTES:-
ALL SEAMS MACHINE LOCK STITCHED WITH SILK SEWING
THREAD, GRADE "B"; 8 TO 12 STITCHES PER INCH.
DIMENSIONS MAY VARY $\pm 1/16$ FROM THOSE SHOWN.
MARKING (EXCEPT IGNITER PAD AND CHARGE NUMBERS)
TO BE NOT LESS THAN 3/8 HIGH.
MARKING ON IGNITER PAD TO BE NOT LESS THAN 3/8 HIGH.
CHARGE NUMBERS (SMALL) TO BE NOT LESS THAN 1/8 HIGH.
CHARGE NUMBERS (LARGE) TO BE NOT LESS THAN 2/8 HIGH.
MARK WITH INDELIBLE MARKING INK, TYPE "B", (2).
(3) ALTERNATIVE MATERIAL: - SEE DRAWING 71-9-190A.

JUNE 12, 1942			
CLASS	DIVISION	DRAWING	FILE
71	9	193	
SYMBOL			
DRG. PERTAINS TO			
71-9-190			
SUBMITTED			
EXAMINED			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
ORDNANCE DEPT. U.S.A.			

SCALE, INCHES, 1/2" = 1"

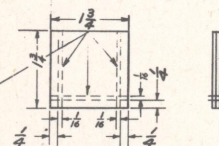
AFTER LOADING, SEW WITH SILK THREAD,
NOT LESS THAN 12 STITCHES PER INCH.
USE STITCHING TYPE 301, SPEC. DDD-S-751.



PROPELLING CHARGE ASSEMBLY 71-9-208A1

CHARGE 71-9-208C1
40±3 GRAINS ARMY BLACK
POWDER, GRADE A-4, GLAZED

SEW WITH SILK THREAD, NOT
LESS THAN 12 STITCHES PER
INCH. USE STITCHING TYPE
301, SPEC. DDD-S-751.



BAG, POWDER 71-9-208B1
SILK, CLASS B

ALTERNATIVE MATERIAL:--MUSLIN,
BLEACHED, TYPE II.

ALTERNATIVE MATERIAL:--COTTON, GRADE C.

LIST OF PARTS

LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECEMARK	MATERIAL				APPROXIMATE UNIT WEIGHT (GRAINS)	APPROX. GROSS WT. OF RAW STOCK PER ASSEMBLY	REMARKS
				SIZE OR FORM	KIND	GRADE	SPECIFICATION NUMBER			
1	PROPELLING CHARGE ASSEMBLY		71-9-208A							
2	BAG, POWDER	1	71-9-208B		PARACHUTE SILK	CLASS "B"	50-11-51			(a)
3	CHARGE	1	71-9-208C		ARMY BLACK POWDER, GLAZED	A-4	50-14-1	40±3.		
4										
5										
6					THREAD, SILK, SEWING	CLASS "A"	T-7			(b)
7										
8										

(a) ALTERNATIVE MATERIALS:--MUSLIN, BLEACHED, TYPE II, SPEC. CCC-M-911 OR COTTON, GRADE "C", SPEC. 50-11-65.

(b) SUBSTITUTE MATERIAL (WHEN AUTHORIZED BY CHIEF OF ORDNANCE):--COTTON MACHINE THREAD, TYPE I, SOFT 1A, UNBLEACHED 1A1, SPEC. V-T-276.

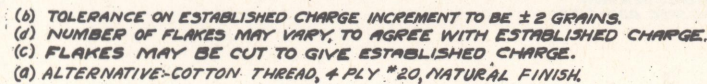
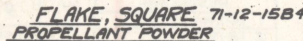
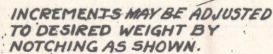
LIST OF SPECIFICATIONS

LINE NO.		SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPEC. FOR	50-0-1	DRG. 71-9-208
2			
3	CLOTH, COTTON, CARTRIDGE	50-11-65	DRG. 71-9-208
4			
5	MANUFACTURE OF BAGS, IGNITERS, AND IGNITER	50-65-1	DRG. 71-9-208
6	PROTECTOR CAPS FOR PROPELLING CHARGES		
7	MUSLIN, BLEACHED	CCC-M-911	DRG. 71-9-208
8			
9	SILK, PARACHUTE, PYROTECHNIC	50-11-51	DRG. 71-9-208
10	POWDER, BLACK, ARMY	50-14-1	DRG. 71-9-208
11	STITCHES, SEAMS, AND STITCHING	DDD-S-751	DRG. 71-9-208
12	THREAD, COTTON	V-T-276	DRG. 71-9-208
13	TEXTILES, GENERAL SPECIFICATIONS, TEST METHODS	CCC-T-191	50-11-65
14	THREAD, SILK, SEWING (FOR POWDERBAGS)	T-7	DRG. 71-9-208
15			
16			

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

CHARGE, PROPELLING, FOR MINE, ANTI-PERSONNEL, M2A4 AND M2A4B2 ASSEMBLY AND DETAILS.

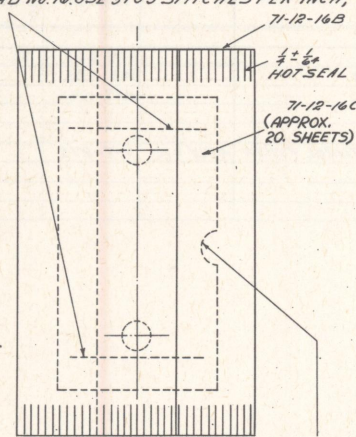
MAY 28, 1943		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	9	208	
1	6-2-44				
2	8-15-45				
		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
DRG. PERTAINS TO		DFTSMAN	TRACER	ENGINEER	
		J.T.	ut		
		CHECKER		ENGINEER	
		ut			
		SUBMITTED:			
		Am Gallagher			
		MAJOR, C&D, DEPT. U.S.A.			
		EXAMINED:			
		Dr. Woodberry			
		LT COL., ORD. DEPT. U.S.A.			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE:			
		A.B. Melling			
		COL., ORD. DEPT. U.S.A.			
82-0-94					
82-0-71					
SCALE: 1/4"		ORDNANCE DEPT., U.S.A.			



* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

INCREMENT, PROPELLANT, M.I.A. FOR 81 MM. MORTAR AMMUNITION ASSEMBLY AND DETAILS.					
NOVEMBER 2, 1939		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	12	15	
1	4-29-41	SYMBOL			
2	10-21-41				
3	11-17-43				
4	8-15-45				
DRG. PERTAINS TO		ORIGINAL C-84	TRACER C-84	TRACER C-84	
		CHECKED M.H.	CHECKED C.R.	CHECKED M.T.	
		SUBMITTED			
		CAPT. U.S. A. & F.			
		COL. GEN. COPT. U.S. A. & F.			
		APPROVED BY ORDER OF THE CHIEF OF THE BUREAU			
		J. H. [Signature]			
		M.T. COPT. U.S. A. & F.			
		ORDNANCE DEPT. U.S. A. & F.			

SEW SHEETS ON TWO OPPOSITE SIDES WITH COTTON
SEWING THREAD NO. 16. USE 3 TO 5 STITCHES PER INCH,
TYPE I.
(SEE NOTE H) 71-12-16B



INCREMENTS MAY BE ADJUSTED TO DESIRED WEIGHT BY NOTCHING AS SHOWN OR BY ADDING SHEETS OR PART OF A SHEET OF POWDER BAG ASSEMBLY 71-12-16B 6

INCREMENT, PROPELLANT, M2A1, ASSEMBLY 71-12-16A8

NOTES:-

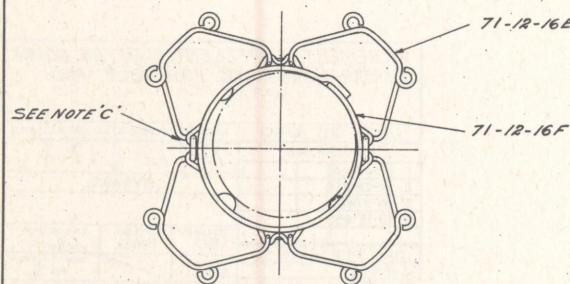
NOTES:-

- A- PATTERN OF CRIMPING HOT SEALS ARE OPTIONAL BUT MUST HAVE PRIOR APPROVAL OF CONTRACTING OFFICER.
- B- DIAMETER OF COLLAR TO BE SLIGHTLY OVAL TO ALLOW FOR TOLERANCE ON SHANK OF FIN ASSEMBLY.
- C- INSERT CLIP IN SLOT ON COLLAR AND CRIMP IN PLACE SO AS TO HOLD SECURELY.
- D- ALL CLIP BENDS TO HAVE A MINIMUM .05R UNLESS OTHERWISE SPECIFIED.
- E- FINISH-TYPE III, CLASS A, GRADE I.

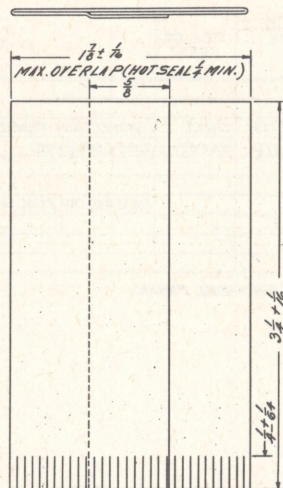
F- REMOVE ALL BURRS.

G- HOT SEAL MAY VARY $\frac{1}{8}$ FROM EDGE OF BAG.

H - ALTERNATE METHOD OF SEWING - TWO ROWS OF STITCHES BETWEEN PERFORATIONS APPROXIMATELY $\frac{1}{4}$ " FROM INNER EDGE OF PERFORATION



HOLDER, INCREMENT, M3, ASSEMBLY 71-12-1608
SEE NOTE "E"



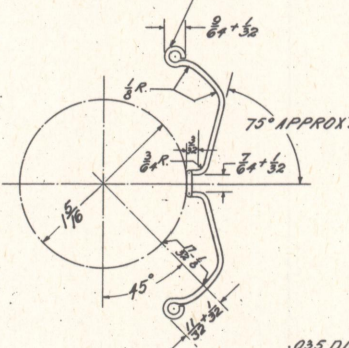
Technical drawing of a rectangular plate. The drawing includes the following dimensions and features:

- Top Dimension:** $1\frac{1}{2} - \phi$
- Left Dimension:** $2\frac{5}{8} - \phi$
- Right Dimension:** $\frac{1}{8}$ (top section) and $\frac{1}{2}$ (bottom section)
- Bottom Dimension:** $.23 \pm .04$
- Internal Features:** Two circular holes are positioned vertically along the centerline of the plate.
- Title Block (Top Left):**
 - Part Number: .008-001
 - Quantity: 1
 - Material: 304 SS
 - Finish: 2B
 - Notes: 1. SEE DIMENSIONS FOR TOLERANCES

SHEET, POWDER 71-12-16C7
PROPELLENT POWDER.

NOTE-G —

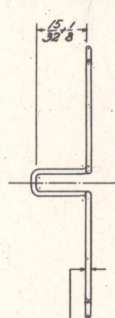
EYES TO BE SLIGHTLY OVAL-



.035 DIA. (NO. 20 B.W. GAGE.)

CLIP 71-12-16E7
STEEL, WIRE, WD. 1085 W.
DEVELOPED LENGTH 4.25 APPROX

INCREMENT PROPELLANT M2A1
ASSEMBLY, ALT. 71-12-1667
FOR ALL OTHER INFORMATION SEE 71-12-16A



COLLAR 71-12-16F6
STEEL, COLD ROLLED, WD. 1010 OR WD. 1020
DEVELOPED LENGTH 4.25 APPROX.

LINE NO.	NAME OF PART	NUMBER REQD PER COMPONENT	PIECE-MARK	MATERIAL				APPROXIMATE UNIT WEIGHT OZ/IN	APPROX GRSS WT/IN	APPROX NET WT/IN	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER				
1	INCREMENT, PROPELLENT, M2A1 ASSEMBLY		71-12-16A					205			(A)
2	INCREMENT, PROPELLENT, M2A1 ASSEMBLY (PLT)		71-12-16B					205			(B)
3	BAG ASSEMBLY	1	71-12-16 B	SHEET	CELLOPHANE		AXS-1065				
4	HOLDER, INCREMENT, M3 ASSEMBLY		71-12-16 D								
5	CLIP	4	71-12-16 E	WIRE	WIRE, MUSIC, STEEL	WD.1085W	#8-18				
6	COLLAR	1	71-12-16 F	STRIP	STEEL	WD.1010 OR WD.1020	#7-136				
7	SHEET, POWDER	(A)	71-12-16 C	SHEET	PROPELLENT POWDER		PXS-633				
8											
9											
10					THREAD, COTTON, NATURAL FINISH	#PLY, NO. 16	V-T-276				(C)
11	BAG ASSEMBLY (PLT)	1	71-12-16 H	SHEET	CELLOPHANE		AXS-1065				(E)

(Q) NUMBER OF SHEETS MAY VARY TO AGREE WITH ESTABLISHED CHARGE

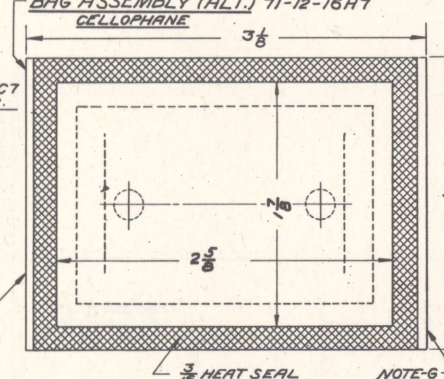
(b) TOLERANCE ON ESTABLISHED CHARGE INCREMENT TO BE ± 3 GRAINS

(C) ALTERNATIVE:- COTTON THREAD, 4 PLY NO. 20, NATURAL FINISH, OR

SILK SEWING THREAD, CLASS A, SPEC. 7-7 OR THREAD,
TYPE 6-66, UNCOATED, COMMERCIAL

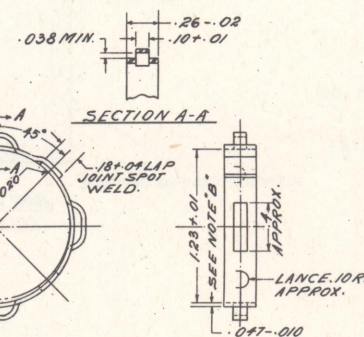
(c) USED ON ALTERNATIVE ASSEMBLY ONLY

6 ASSEMBLY (A/T) 71-12 1647



LINE NO	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRE BY.
		*	
1	AMMUNITION, EXCEPT SMALL ARMS AMMUNITION, GENERAL SPECIFICATION FOR	50-O-1	DRG. 7-12-1
2	POWDER, PROPELLANT, B/M, MORTAR (FOR INCREMENT CHARGES)	PXS-633	DRG. 7-12-1
3	STITCHES; SEAMS, AND STITCHING.	DDD-5-751	DRG. 7-12-1
4	THREAD, COTTON	V-T-27	DRG. 7-12-1
5	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	GG-M-151	48-18
6	STEEL, WIRE, MUSIC SPRING	48-18	DRG. 7-12-1
7	FINISHES, PROTECTIVE, FOR IRON AND STEEL PARTS	57-O-2	DRG. 7-12-1
8	PAINTS AND RELATED MATERIALS, GENERAL SPECIFICATION FOR	3-1	3-162
9	CELLOPHANE	AXS-1065	DRG. 7-12-1
10	THREAD, SILK, SEWING (FOR POWDER BAGS)	7-7	DRG. 7-12-1

* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED, A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.



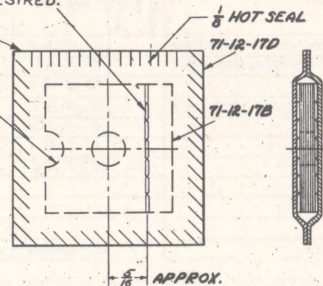
SUPERSEDES OLD TRACING 71-12-16 UNDER
REVISION DATE OF APRIL 21, 1944.

INCREMENT, PROPELLANT, M2A1 & HOLDER
M3 FOR 8MM. SHELL, H.E. M56.
AND CHEMICAL M57. ASSEMBLY & DETAILS

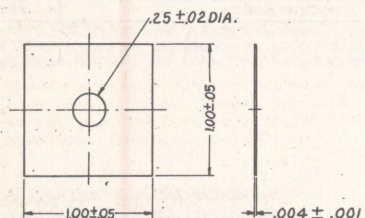
SEPT. 9, 1940			CLASS		DIVISION		DRAWING		FILE	
REVISIONS			7/		12		16			
4	12-28-42		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED DECIMAL ± FRACTIONAL ± ANGULAR ±							
5	4-5-43									
6	4-21-44									
7	1-4-45									
8	8-15-45									
DRG. PERTAINS TO			DFTMAN		TRACER		ENG'G			
			WHA / S.K.		4/24		9/15			
			CHECKER				O.S. PRINCIPAL ENGR			
			11/8				4/26			
			SUBMITTED:		[Signature] 11/8 ORD. DEPT. U.S.					
			EXAMINED:		[Signature] 11/8 ORD. DEPT. U.S.					
			APPROVED BY ORDER OF THE CHIEF ORDNANCE:		[Signature] 11/8 ORD. DEPT. U.S.					
					C-5. Red by a CO2. ORD. DEPT. U.S.					
D					ORDNANCE DEPT., U.S. A					

METHOD OF CRIMPING OPTIONAL
FLAKES TO BE SECURELY SEWED AS SHOWN IN A BAG WITH TYPE 301 STITCHING. USE COTTON SEWING THREAD WITH 4 TO 5 STITCHES PER INCH. RELATIVELY LOOSE STITCH DESIRED.

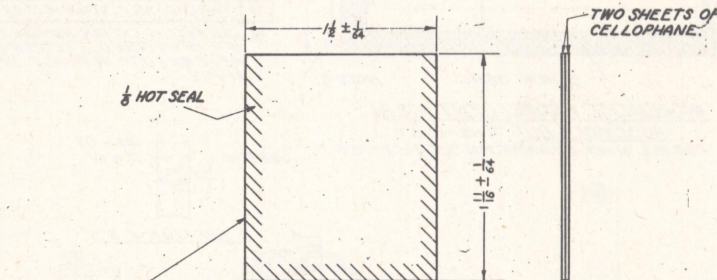
INCREMENTS MAY BE ADJUSTED TO DESIRED WEIGHT BY NOTCHING SIDE, AS SHOWN.



ASSEMBLY 71-12-17C4
WEIGHT: APPROX. 35 GRAINS \pm 1 GRAIN



FLAKE, SQUARE 71-12-17B4
PROPELLANT POWDER



BAG ASSEMBLY 71-12-17D4
CELLOPHANE

LIST OF PARTS

LINE NO.	NAME OF PART	NUMBER REQ'D PER COMPONENT	PIECE-MARK	MATERIAL			APPROXIMATE UNIT WEIGHT (GRAINS)	APPROX. GROSS WT. OF RAW STOCK PER 1000 ASSEMBLIES	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER		
1	ASSEMBLY (ALTERNATIVE)		71-12-17C				PXS-669	35.	
2	FLAKE, SQUARE		71-12-17B	SHEET	PROPELLANT POWDER		PXS-688		
3	BAG ASSEMBLY		71-12-17D	SHEET	CELLOPHANE		AXS-1065		
4									
5									
6									
7					THREAD, COTTON, NATURAL FINISH	4 PLY #16	V-T-276		(a)
8									
9									
10									

(a) ALTERNATIVE:- COTTON THREAD, 4 PLY #20, NATURAL FINISH.

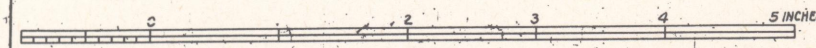
LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER *	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC. FOR	50-0-1	DRG. 71-12-17
2	INCREMENT, PROPELLANT, M3A1 FOR 60MM. MORTAR AMMUNITION	PXS-669	DRG. 71-12-17
3	POWDER PROPELLANT, 60 MM. TRENCH MORTAR (FOR INCREMENT CHARGES)	PXS-688	DRG. 71-12-17
4	CELLOPHANE	AXS-1065	DRG. 71-12-17
5			
6	THREAD, COTTON	V-T-276	DRG. 71-12-17

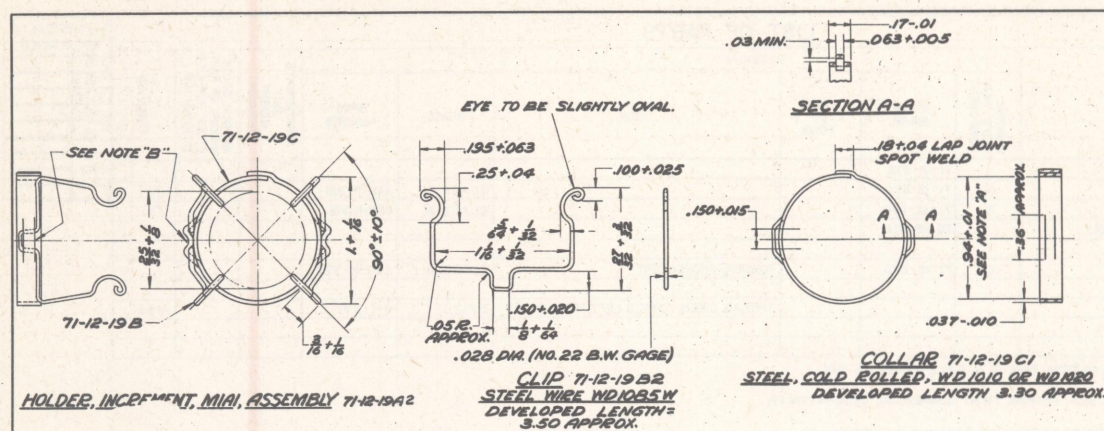
* THE SPECIFICATION NUMBERS SHOWN ARE BASIC NUMBERS ONLY. WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER. SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON, SHALL NOT APPLY.

NOTICE: THIS DRAWING IS NOT TO BE USED FOR REPRODUCTION OR FOR THE FABRICATION OF PARTS WITHOUT THE AUTHORITY OF THE GOVERNMENT PROCUREMENT

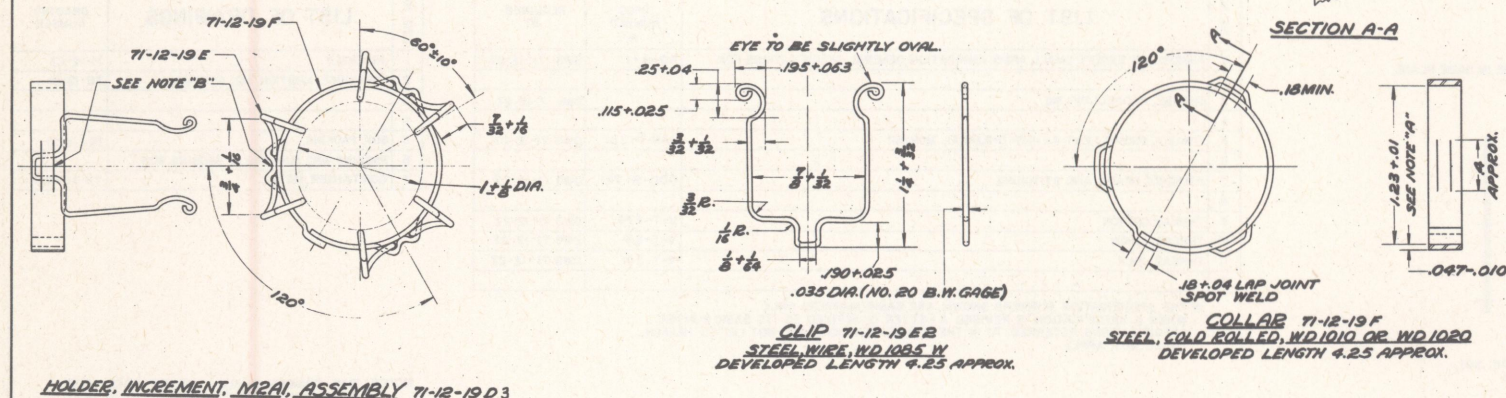
INCREMENT, PROPELLANT, M3A1 FOR 60 MM. MORTAR AMMUNITION. ASSEMBLY. AND DETAIL.

JULY 22, 1940		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	12	17	
1	8-29-40				
2	1-28-41				
3	9-3-43				
4	8-15-45				
DRG. PERTAINS TO		CHECKER	TRACER	ENG. IN CHG.	
75-1-82		CAC		M.T.	
75-1-83					
EXAMINED		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
		ORDNANCE DEPT. U.S.A.			





LINE NO.	NAME OF PART	NUMBER REQD. PER ASSEMBLY	PIECEMARK	MATERIAL				APPROX. UNIT WEIGHT (POUNDS)	APPROX. GROSS WT. OF ARM. SPECIFIED ASSEMBLIES	REMARKS
				SIZE OR FORM	KIND	GRADE	SPEC. NUMBER			
1	HOLDER, INCREMENT, M1A1, ASSEMBLY		71-12-19A					.005		
2	HOLDER, INCREMENT, M2A1, ASSEMBLY		71-12-19D					.015		
3										
4	CLIP	2	71-12-19B	WIRE	WIRE, MUSIC, STEEL	WD 1085W	48-18			
5	CLIP	3	71-12-19E	WIRE	WIRE, MUSIC, STEEL	WD 1085W	48-18			
6	COLLAR	1	71-12-19C	STRIP	STEEL	WD 1010 OR WD 1020	57-136			
7	COLLAR	1	71-12-19F	STRIP	STEEL	WD 1010 OR WD 1020	57-136			
8										
9										
10										



LINE NO.	LIST OF SPECIFICATIONS	SPEC. NUMBER	REQUIRED BY
1	AMMUNITION EXCEPT SMALL ARMS AMM. GENERAL SPEC. FOR	50-0-1	ARG. 71-12-19
2			
3	FINISHES, PROTECTIVE, FOR IRON AND STEEL PARTS	57-0-2	ARG. 71-12-19
4			
5	METALS; GENERAL SPECIFICATION FOR INSPECTION OF	Q8-M-151	48-18
6	PAINTS AND RELATED MATERIALS GENERAL SPEC. FOR	3-1	3-152
7	STEEL, WIRE, MUSIC SPRING	48-18	ARG. 71-12-19
8			
9	STEEL, CARBON AND ALLOY; SHEETS AND STRIPS	57-136	ARG. 71-12-19
10			
11			
12			

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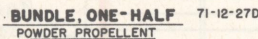
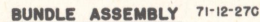
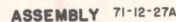
HOLDER, INCREMENT PROPELLENT, M1A1
FOR USE WITH 60 MM. MORTAR AMMUNITION.
HOLDER, INCREMENT PROPELLENT, M2A1
FOR USE WITH 81 MM. MORTAR AMMUNITION.

SUPERSEDES OLD TRACING 71-12-19
UNDER REVISION DATE OF DEC. 18, 1943.

HOLDERS, INCREMENT PROPELLENT, M1A1 AND M2A1 ASSEMBLY AND DETAILS.

REVISIONS	CLASS	DIVISION	DRAWING	FILE
1 9-20-43	71	12	19	
2 12-18-43				
3 8-15-45				
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED				
DECIMAL ±				
FRACTIONAL ±				
ANGULAR ±				
DRG. PERTAINS TO				
SUBMITTED				
EXAMINED				
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE				
SCALE: 1/2"				
ORDNANCE DEPT., U.S.A.				

NOTES:-
A- DIAMETER OF COLLAR TO BE SLIGHTLY OVAL TO ALLOW FOR TOLERANCE ON SHANK OF FIN ASSEMBLY.
B- INSERT CLIP IN SLOT ON COLLAR AND CRIMP IN PLACE SO AS TO HOLD SECURELY.
C- ALL CLIP BENDS TO HAVE A MINIMUM .05 R. UNLESS OTHERWISE SPECIFIED.
D- FINISH- TYPE III, CLASS A, GRADE I.
E- REMOVE ALL BURRS.



(d) ALTERNATIVE MATERIAL: THREAD, COTTON, TYPE III B, 6 PLY, TICKET NO. 10/6, UNBLEACHED, SPEC V-T-276. (C)

(b) ALTERNATIVE MATERIAL: THREAD, SILK, MACHINE TWIST COMMERCIAL DESIGNATION FF, WHITE, SPEC V-T-301 (C)

(c) FIVE-BUNDLE PACK ASSEMBLY TO BE MADE USING TEN ONE-HALF BUNDLES.

(d) BUNDLE ASSEMBLY TO BE MADE USING TWO ONE-HALF BUNDLES.

(e) ALTERNATIVE MATERIALS ARE INTENDED TO BE USED ONLY WHEN PRESCRIBED ARE NOT AVAILABLE.

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WHEN A SPECIFICATION IS REVISED A LETTER IS AFFIXED TO ITS BASIC NUMBER.
SPECIFICATIONS REFERRED TO IN THESE SPECIFICATIONS AND NOT LISTED HEREON,
SHALL NOT APPLY.

NOTICE: THIS DRAWING SHALL NOT BE USED NOR
REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION
WITH UNITED STATES GOVERNMENT PROCUREMENT.

CHARGE, PROPELLING, M6 ASSEMBLY AND DETAILS					
AUGUST 3, 1950		CLASS	DIVISION	DRAWING	FILE
REVISIONS		71	12	27	
		TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
		DECIMAL ±			
		FRACTIONAL ±			
		ANGULAR ±			
DRG. PERTAINS TO		OFFSMAN	TRACER		ENGINE
75-1-284		CHECKER	AS		ENGINE
75-1-285		501	ADW	502	R. ROBERTSON - 502
		SUBMITTED: <i>G. F. Testard</i>			
		AMM DES. ENG., ORD. DEPT. U. S.			
		EXAMINED: <i>W. H. Lewis</i>			
		ORD. ENG., ORD. DEPT. U. S.			
		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE <i>J. H. H. H.</i>			
		COL., ORD. DEPT. U. S.			
D		ORDNANCE DEPT. U. S. A.			

LIST OF PARTS									
LINE NO.	NAME OF PART	NUMBER REQUIRED PER ASSEMBLY	PIECE MARK	SIZE OR FORM	MATERIAL	GRADE	SPECIFICATION NO.	UNIT WEIGHT APPROX. POUNDS	REMARKS
1	ASSEMBLY	1	72-1-69 A					9500±11	
2	BAND, FRONT	1	72-1-70 G	CAST	BRONZE, TYPE I	COMP. 5	QQ-B-691	3.03	(e)(g)
3	BASE	1	72-1-70 A	CAST	STEEL	"0"	QQ-5-681	20.87	
4	BODY	1	72-1-70 B	CAST	STEEL	"0"	QQ-5-681	26.97	
5	BAND, REAR	1	72-1-70 F	CAST	MANGANESE BRONZE	CLASS A, BRON	QQ-B-726	3.62	(e)
6	BODY PLUNGER	1	72-1-70 E	CAST	STEEL	"0"	QQ-5-681	21.95	
7	CAP (NT)	1	72-1-70 C	CAST	BRONZE, TYPE I	COMP. 3	QQ-B-691	16.60	(c)
8	CAP (MTBI)	1	72-1-70 H	CAST	IRON, MALLEABLE, CLASS "B"		AXS-950	16.60	(d)
9									
10	SCREW, SET	2	72-1-69 B	$\frac{1}{2} \times 20 \frac{1}{2}$	CUP POINT, HEX. SOCKET HEAD	STEEL	COMMERCIAL	.01	
11									
12	SPRING	1	72-1-70 D	$\frac{1}{8}$ DIA	STEEL	WD-1095W	48-7	1.96	
13					FLUX, BRAZING (SILVER)		AXS-500		
14					LUBRICATING GREASE, GRAPHITE	SOFT	VV-6-671		
15					LACQUER ENAMEL, BLACK	I	3-162		(a)
16					LACQUER ENAMEL, RED	I	3-162		(b)
17					SYNTHETIC PRIMER		AXS-946		
18					SOLDER, SILVER		AXS-741		

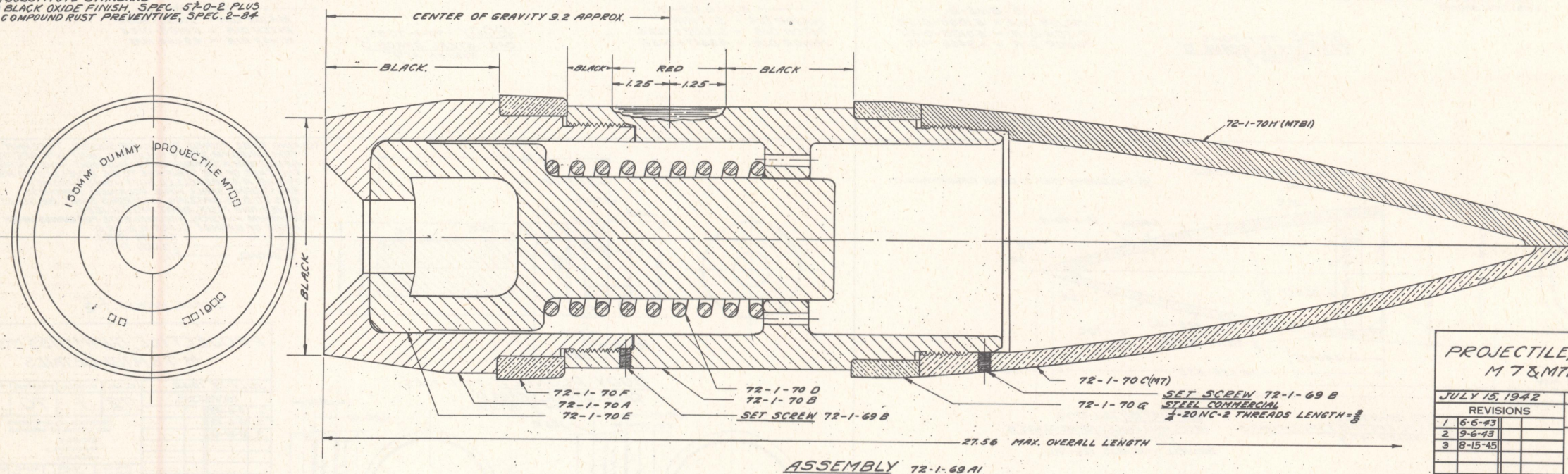
(a) ALTERNATIVE MATERIAL: ENAMEL, BLACK, GRADE I, SPEC. 3-67
 (b) ALTERNATIVE MATERIAL: ENAMEL, RED, GRADE I, SPEC. 3-67
 (c) SUBSTITUTE STANDARD
 (d) BLACK OXIDE FINISH, SPEC. 57-0-2 PLUS COMPOUND RUST PREVENTIVE, SPEC. 2-84

(e) ALTERNATIVE: BRASS, STRIP, COMPOSITION "C", SPEC. QQ-B-611.
 (g) ALTERNATIVE: BRONZE CASTING, CLASS A, B, OR D, SPEC. QQ-B-726.

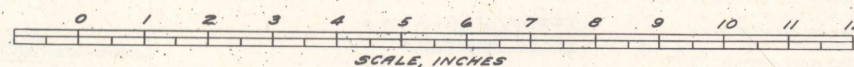
LINE NO.	LIST OF SPECIFICATIONS	SPECIFICATION NO.	REQUIRED BY
1	AMMUNITION, EXCEPT SMALL ARMS AMM, GENERAL SPEC FOR.	50-0-1	DRG. 72-1-69
2	BRONZE, CASTINGS	QQ-B-691	DRG. 72-1-70
3	BRONZE, MANGANESE, CASTINGS	QQ-B-726	DRG. 72-1-70
4	GREASE, LUBRICATING, GRAPHITE	VV-6-671	DRG. 72-1-69
5	IRON, MALLEABLE, CASTING	AXS-950	DRG. 72-1-70
6	COMPOUND RUST PREVENTIVE, LIGHT	2-84	DRG. 72-1-70
7	METALS, GENERAL SPECIFICATION FOR INSPECTION OF	QQ-M-151	QQ-5-681
8	STEEL, CASTINGS	QQ-5-681	DRG. 72-1-70
9	SPRING STEEL WIRE, CARBON AND ALLOY	48-7	DRG. 72-1-70
10	LACQUER ENAMEL, LUSTRELESS, FOR AMMUNITION	3-162	DRG. 72-1-69
11	ENAMEL, LUSTRELESS, QUICK-DRYING, FOR AMMUNITION	3-67	DRG. 72-1-69
12	PAINTS AND RELATED MATERIALS, GENERAL SPECIFICATIONS FOR	3-1	3-162
13	FINISHES, PROTECTIVE, ON IRON AND STEEL PARTS	57-0-2	DRG. 72-1-70
14	PRIMER, SYNTHETIC, LACQUER RESISTING	AXS-946	DRG. 72-1-69
15	BRASS, COMMERCIAL; BARS, PLATES, RODS, SHAPES, SHEETS & STRIPS	QQ-B-611	DRG. 72-1-70
16	FLUX, BRAZING, (SILVER)	AXS-500	DRG. 72-1-70
17	SOLDER, SILVER	AXS-741	DRG. 72-1-70
18	CLEANING & PREPARATION OF METAL SURFACES FOR ORGANIC PROTECTIVE COATINGS	AXS-1245	DRG. 72-1-69

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LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER*
1	ASSEMBLY	DRG. 72-1-69
2	DETAILS	DRG. 72-1-70
3		
4		
5		
6		
7	PACKING CRATE	DRG. 76-3-9
8		



NOTES:-
 A- INTERIOR SURFACES OF BODY INCLUDING ALL THREADS AND EXTERIOR SURFACES OF PLUNGER BODY TO BE COATED WITH GRAPHITE GREASE (SOFT) BEFORE ASSEMBLING.
 B- COAT SURFACES AS INDICATED WITH ONE COAT OF PRIMER, (ADVISORY .0006 TO .001 DRY FILM THICKNESS) PLUS ONE COAT OF BLACK LACQUER ENAMEL OR ENAMEL.
 C- APPLY A FULL PRIME COAT OF PRIMER, SYNTHETIC LACQUER RESISTING, BEFORE FINISH COATING. (ADVISORY FILM DRY THICKNESS .0006 TO .001).



PROJECTILE, DUMMY, 155 MM, M 7 & MTBI ASSEMBLY			
JULY 15, 1942			
REVISIONS	CLASS	DIVISION	DRAWING
1 6-6-43	72	1	69
2 9-6-43			
3 8-15-45			
TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED			
DECIMAL ±			
FRACTIONAL ±			
ANGULAR ±			
DRG. PERTAINS TO	OFFICER	TRACER	ASSOC. ENGINEER
	R.F.H.	R.F.H.	K.L.
CHECKER	A.M.P.		SENIOR ENGINEER
SUBMITTED			
EXAMINED: <i>W. B. Roberts</i>			
L.T. COL., ORD. DEPT. U.S.A.			
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: <i>S. B. Ritchie</i>			
COL., ORD. DEPT. U.S.A.			
FOR BRIG. GEN. ORD. DEPT. U.S.A.			
ORDNANCE DEPT., U.S.A.			

